Dell™ Vostro™ 460 Service Manual

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Regulatory Model: D10M

January 2011 A00

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Notes, Cautions and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Information in this publication is subject to change without notice.

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Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see Turning Off Your Computer).

   CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

3. Disconnect all network cables from the computer.
4. Disconnect your computer and all attached devices from their electrical outlets.
5. Press and hold the power button while the computer is unplugged to ground the system board.
6. Remove the cover.

   CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

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Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe
- Flash BIOS update program media

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Turning Off Your Computer

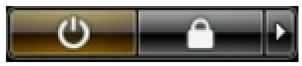
CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system:
   - In Windows 7:

     Click **Start**, then click **Shut Down.**

   - In Windows Vista:

     Click **Start**, then click the arrow in the lower-right corner of the **Start** menu as shown below, and then click **Shut Down**.

   - In Windows XP:

     Click **Start** → **Turn Off Computer** → **Turn Off** . The computer turns off after the operating system shutdown process is complete.

2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.

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After Working Inside Your Computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.

1. Replace the cover.

   CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

2. Connect any telephone or network cables to your computer.
3. Connect your computer and all attached devices to their electrical outlets.
4. Turn on your computer.
5. Verify that the computer works correctly by running the Dell Diagnostics.

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Removing The Computer Cover

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the two thumbscrews securing the computer cover to the computer.



3. Slide the computer cover towards the back of the computer, and then remove it from the computer.



4. Lift the computer cover away from the computer.



Related tasks
Installing Computer Cover

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Installing The Computer Cover

1. Place the computer cover on the computer and slide it inwards from the back of the computer.
2. Replace and tighten the thumbscrews that secure the computer cover on the computer.
3. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Computer Cover

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Removing The Front Bezel

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Gently lift the clips slightly upward to release that edge of the bezel from the chassis.



4. Rotate the bezel away from the computer to release the hooks on the opposite edge of the bezel from the chassis.



Related tasks
[Installing Front Bezel]

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Installing Front Bezel

1. Rotate the bezel towards the computer to place the hooks on the chassis.
2. Gently place the clips downwards to lock the edge of the bezel on the chassis.
3. Install the computer cover.
4. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Front Bezel

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Removing The Chassis Fan

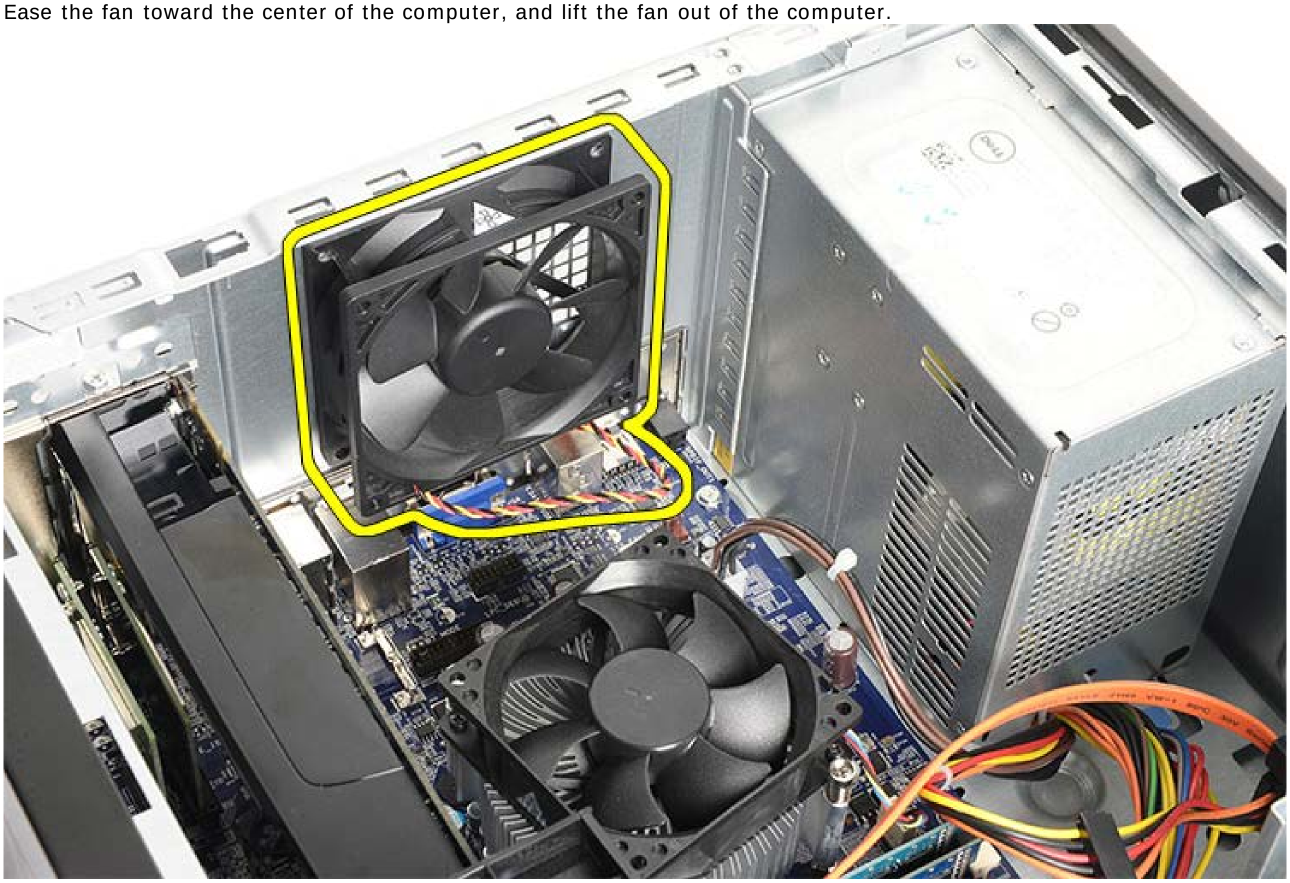
1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Disconnect the fan cable from the system board.



4. While holding the chassis fan in place, remove the four screws that secure the fan to the chassis.



5. Ease the fan toward the center of the computer, and lift the fan out of the computer.



Related tasks
[Installing Chassis Fan]()

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Installing The Chassis Fan

1. Place the fan towards the center of the computer into the chassis.
2. While holding the chassis fan in place, replace the four screws that secure the fan to the chassis.
3. Reconnect the fan cable to the system board.
4. Install the computer cover.
5. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Chassis Fan

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Removing The Hard Drive

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Remove the data cable (1) and power cable (2) from the back of the hard drive.



4. Remove the two screws securing the hard drive cage to the chassis.



5. Slide the hard drive out of the slot, toward the side of the computer.



6. Remove the two screws securing the hard drive to the drive cage.



Related tasks

Installing Hard Drive

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Installing The Hard Drive

1. Tighten the screws securing the hard drive to the drive cage.
2. Place the hard drive into the slot, towards the side of the computer.
3. Tighten the screws securing the hard drive cage to the chassis.
4. Reconnect the data cable and power cable to the back of the hard drive.
5. Replace the computer cover.
6. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Hard Drive

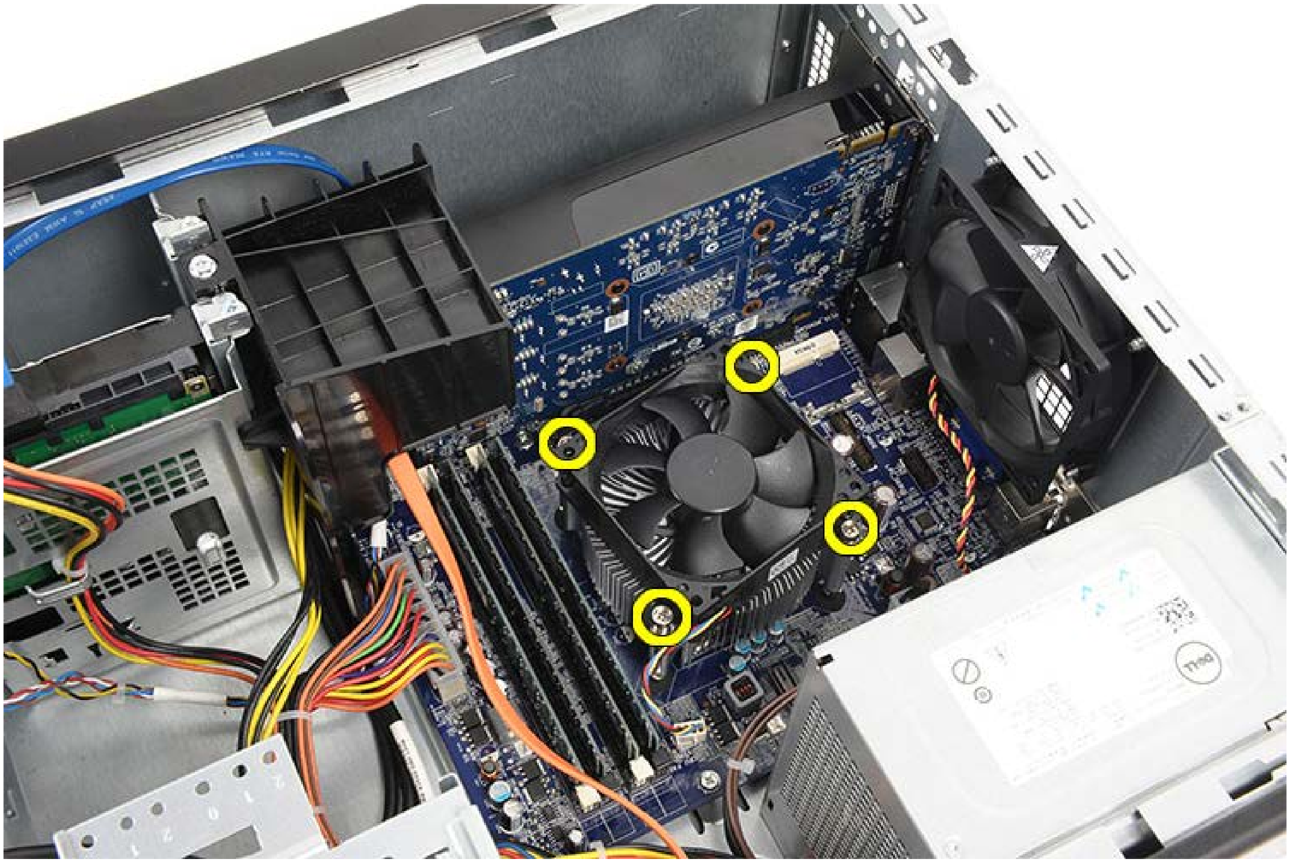
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Removing The Heat Sink And Processor Assembly

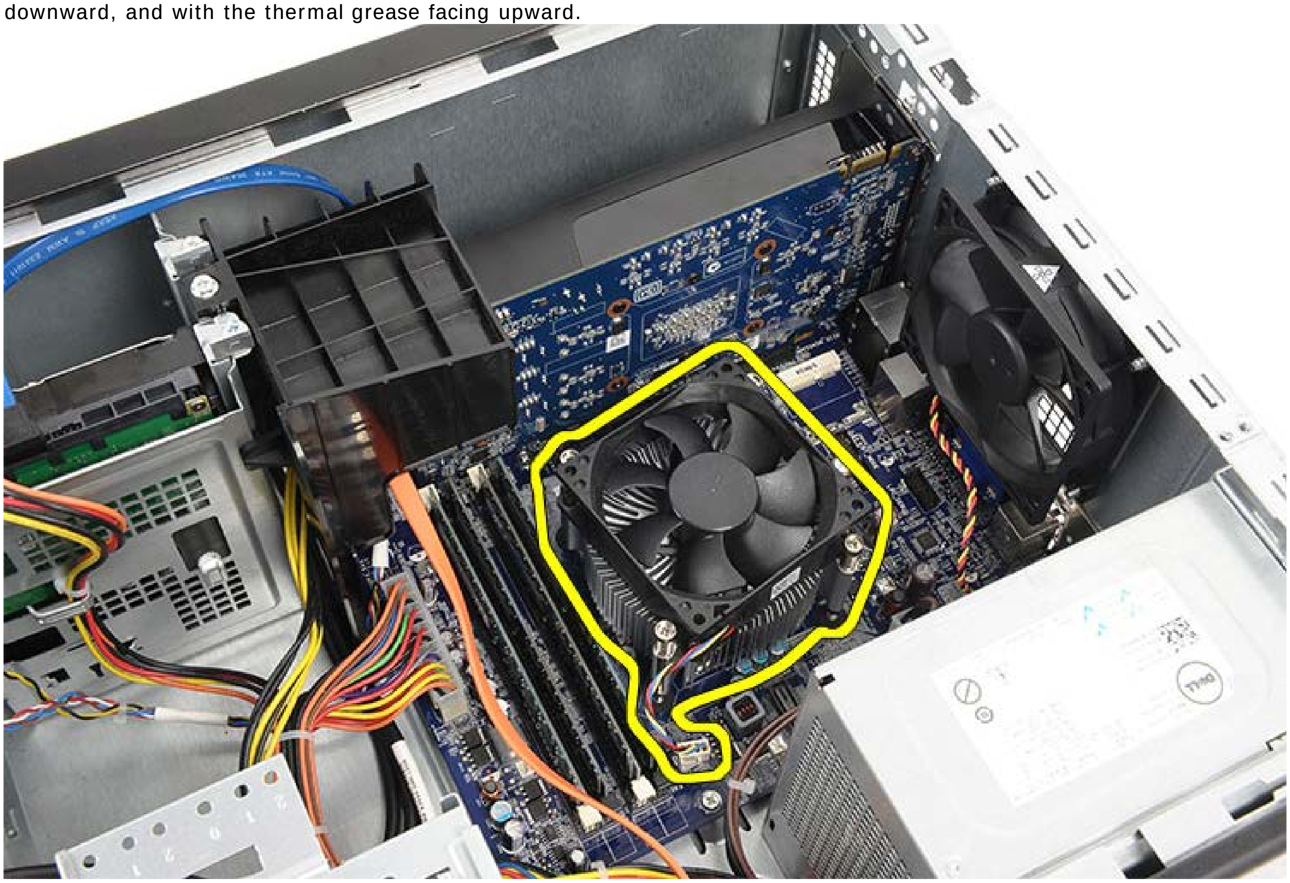
1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Disconnect the heat sink/fan assembly cable from the system board.



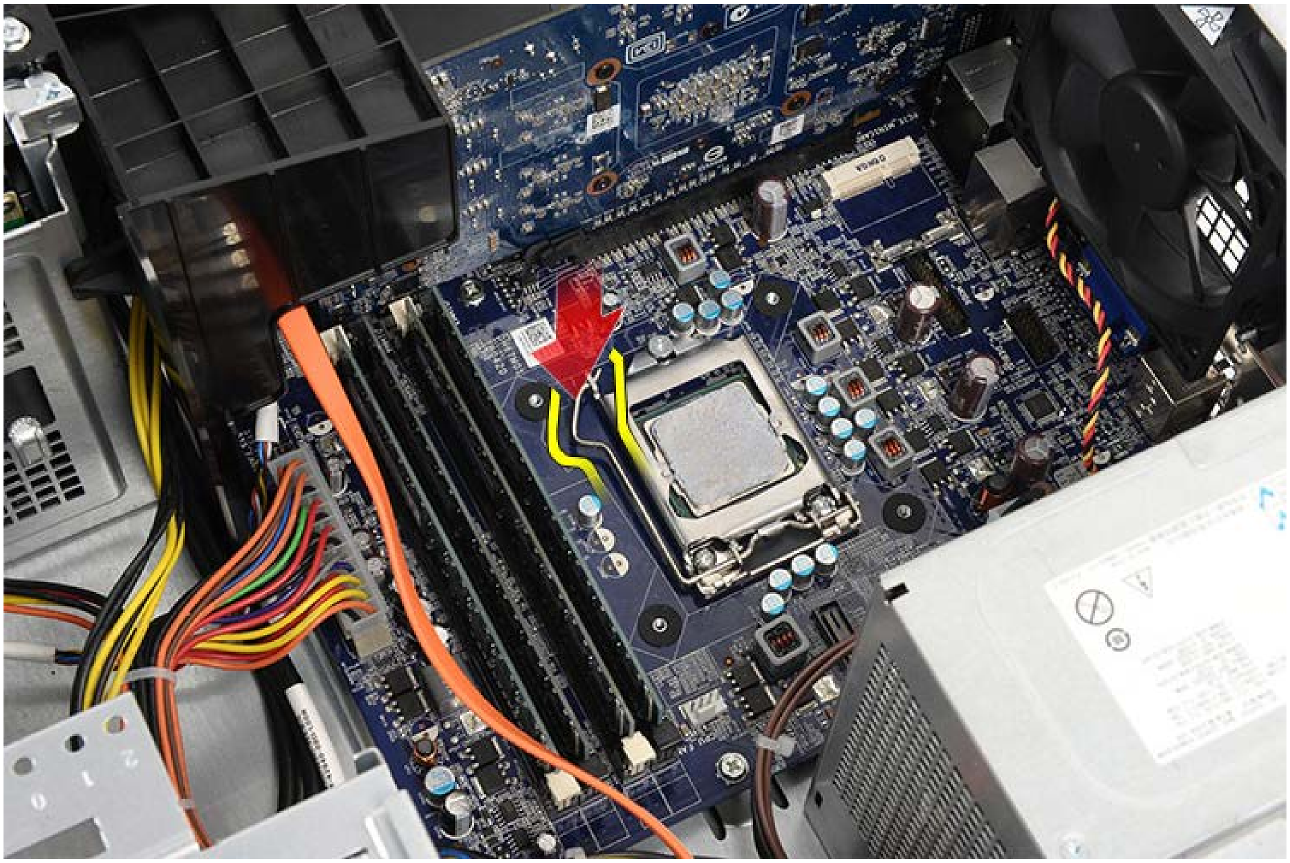
4. Loosen the four captive screws that secure the heat sink/fan assembly to the system board.



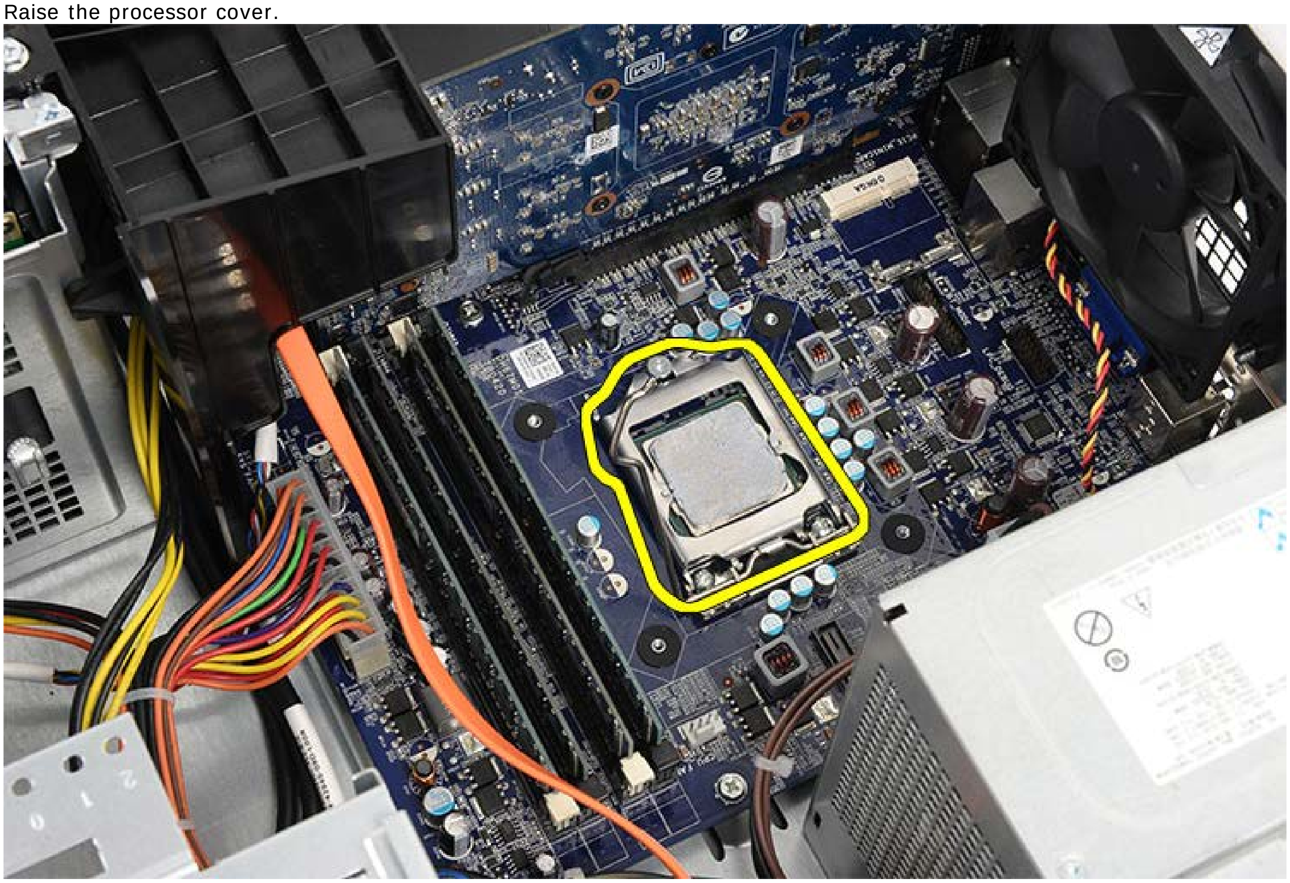
5. Lift the heat sink/fan assembly upward gently, and remove it from the computer. Lay the assembly with the fan facing downward, and with the thermal grease facing upward.



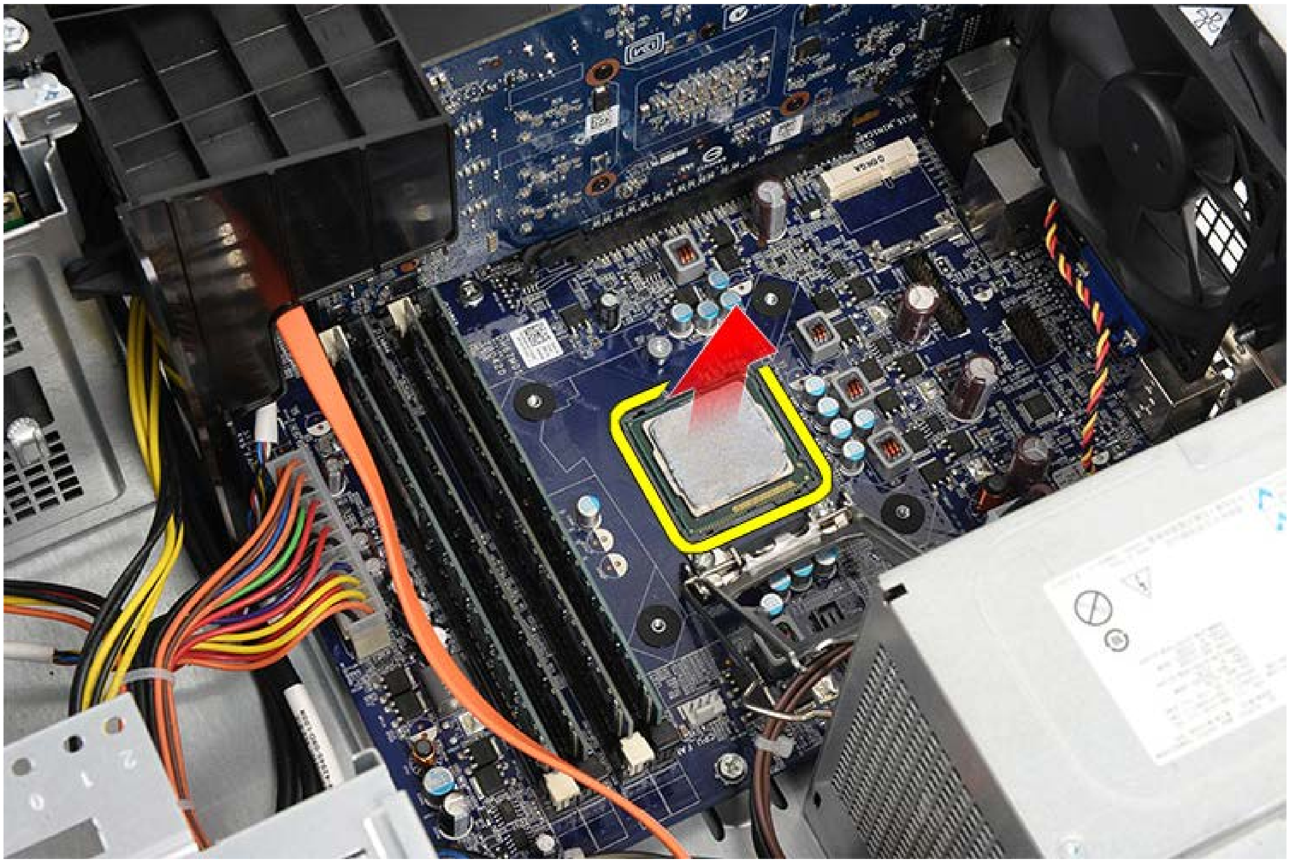
6. Push the release lever down and then press it outward to release it from the retention hook that secures it.



7. Raise the processor cover.



8. Lift the processor to remove it from the socket and place it into antistatic packaging.



Related tasks

[Installing Processor]

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Installing The Heat Sink And Processor Assembly

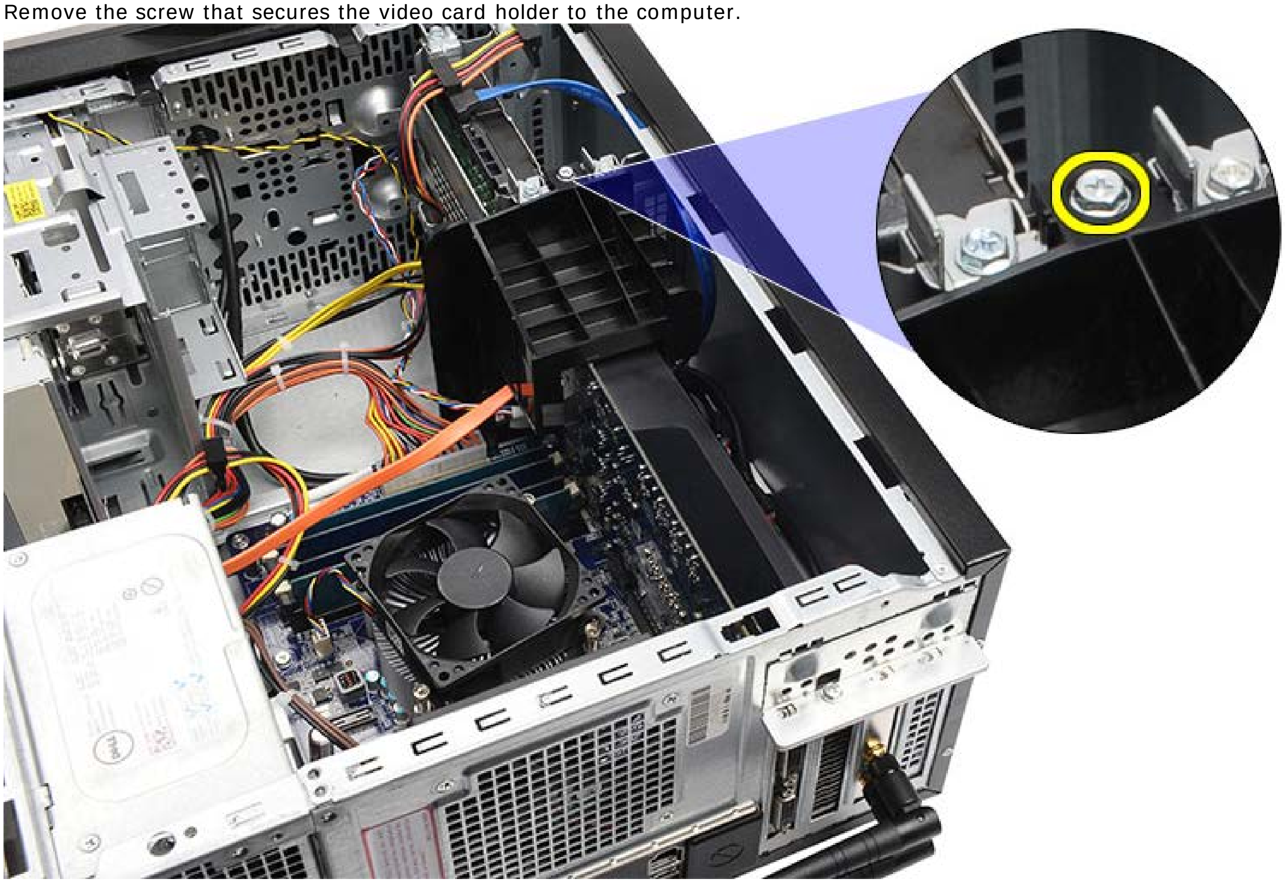
1. Remove the processor from the antistatic packaging and place it into the socket.
2. Place the processor cover.
3. Push the release lever down and then press it inward to hold the retention hook that secures it.
4. Place the heat sink/fan assembly into the computer.
5. Tighten the four captive screws securing the heat sink/fan assembly to the system board.
6. Reconnect the heat sink/fan assembly cable from the system board.
7. Replace the computer cover.
8. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing The Heat Sink And Processor Assembly

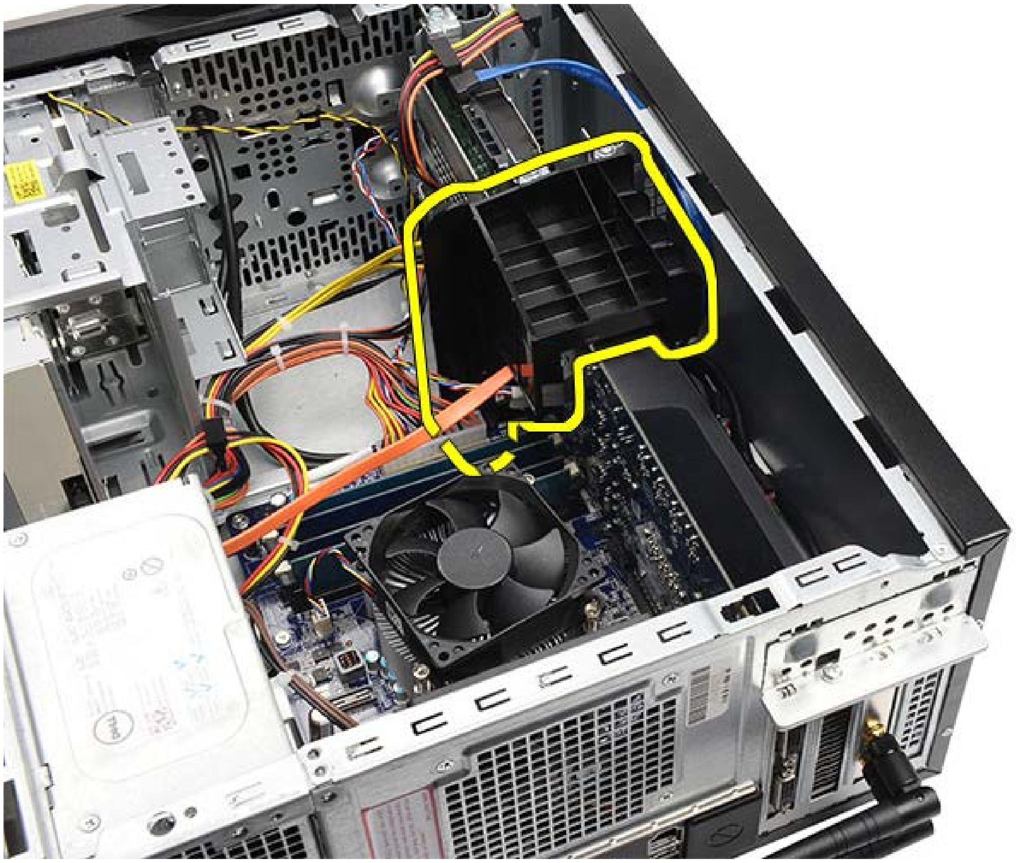
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Removing The Video Card Holder

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Remove the screw that secures the video card holder to the computer.



4. Remove the video card holder from the computer.



Related tasks
[Installing Video Card Holder]

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Installing The Video Card Holder

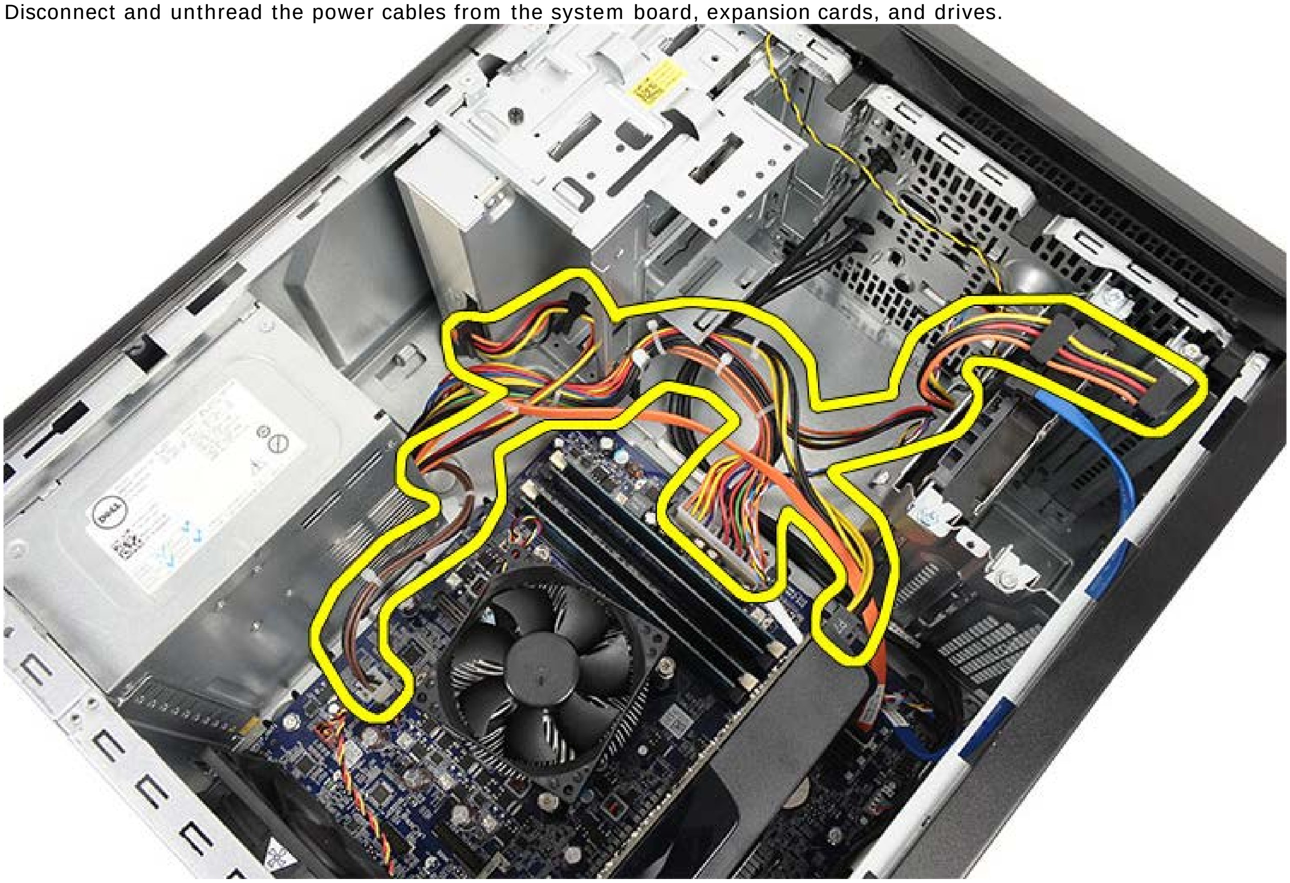
1. Place the video card holder into the system.
2. Replace the screw securing the video card holder.
3. Replace the computer cover.
4. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Video Card Holder

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Removing The Power Supply

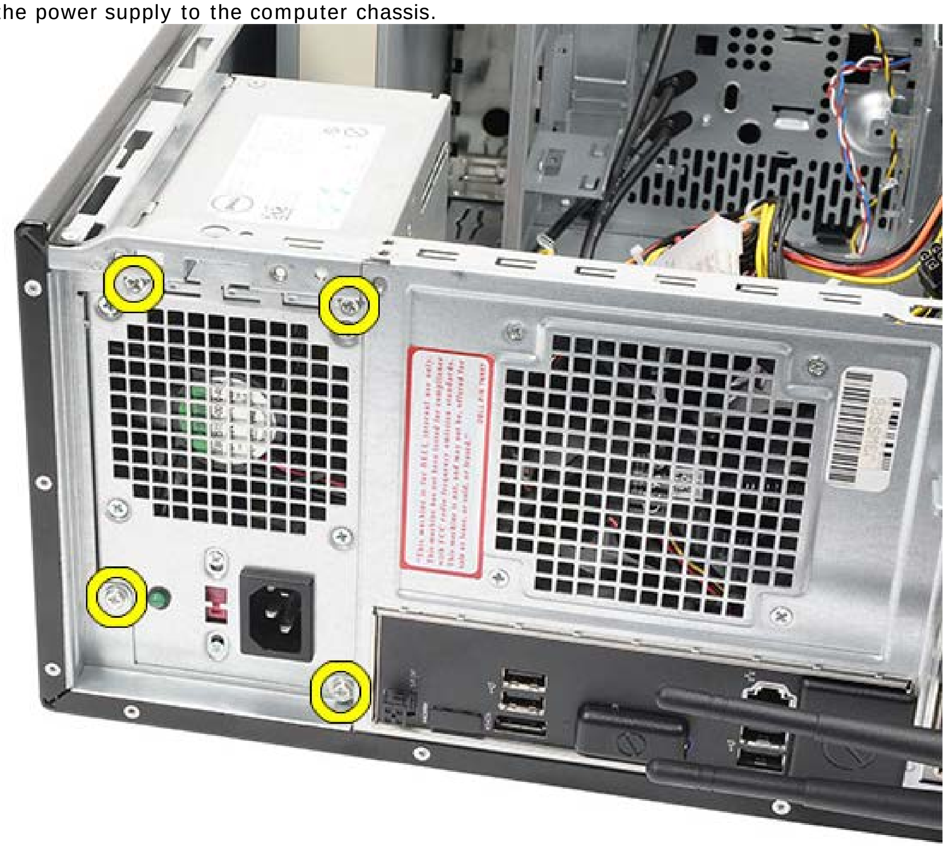
1. Follow the procedures in [Before Working Inside Your Computer](#)
2. Remove the [computer cover](#).
3. Remove the [video card holder](#).
4. Disconnect and unthread the power cables from the system board, expansion cards, and drives.



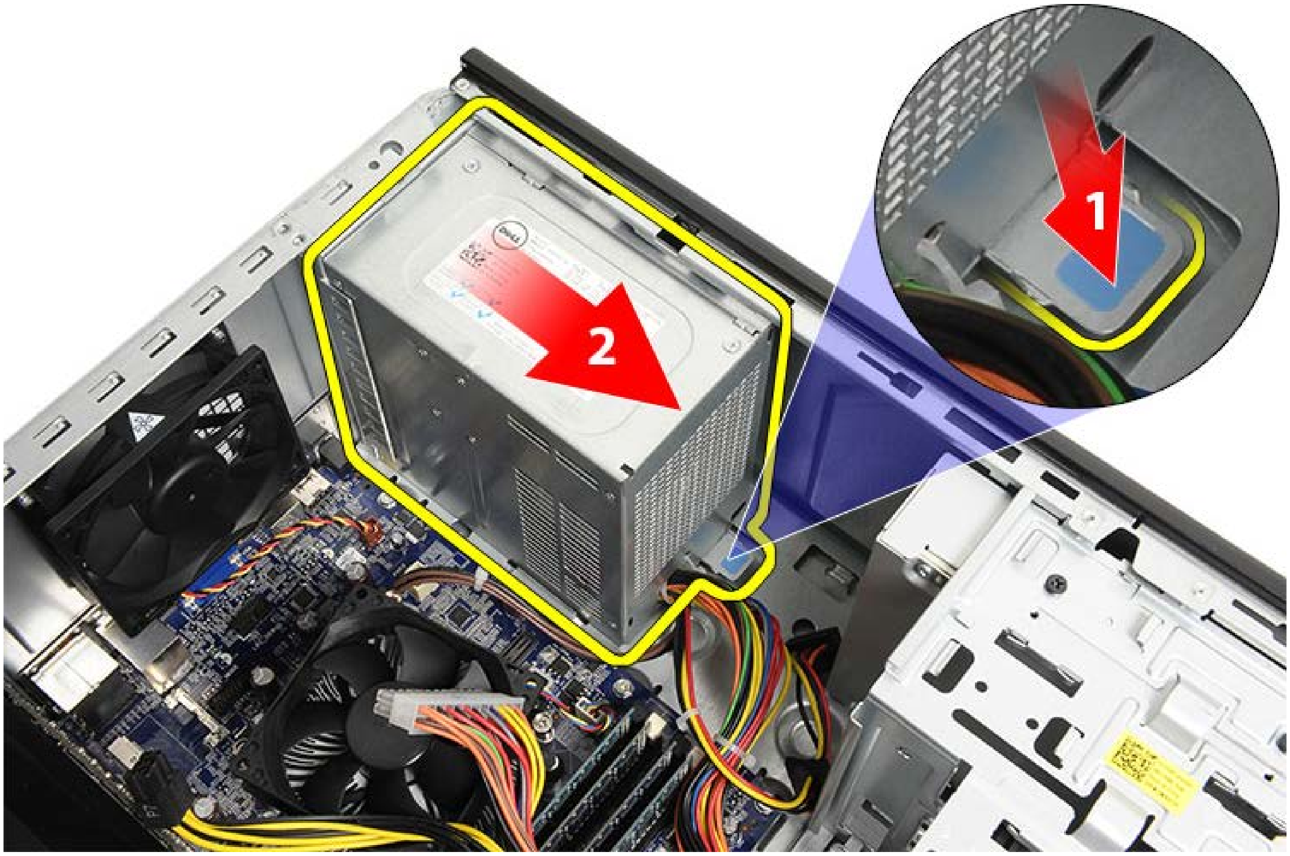
5. Disengage the cables from the routing clips, if present, on the computer.



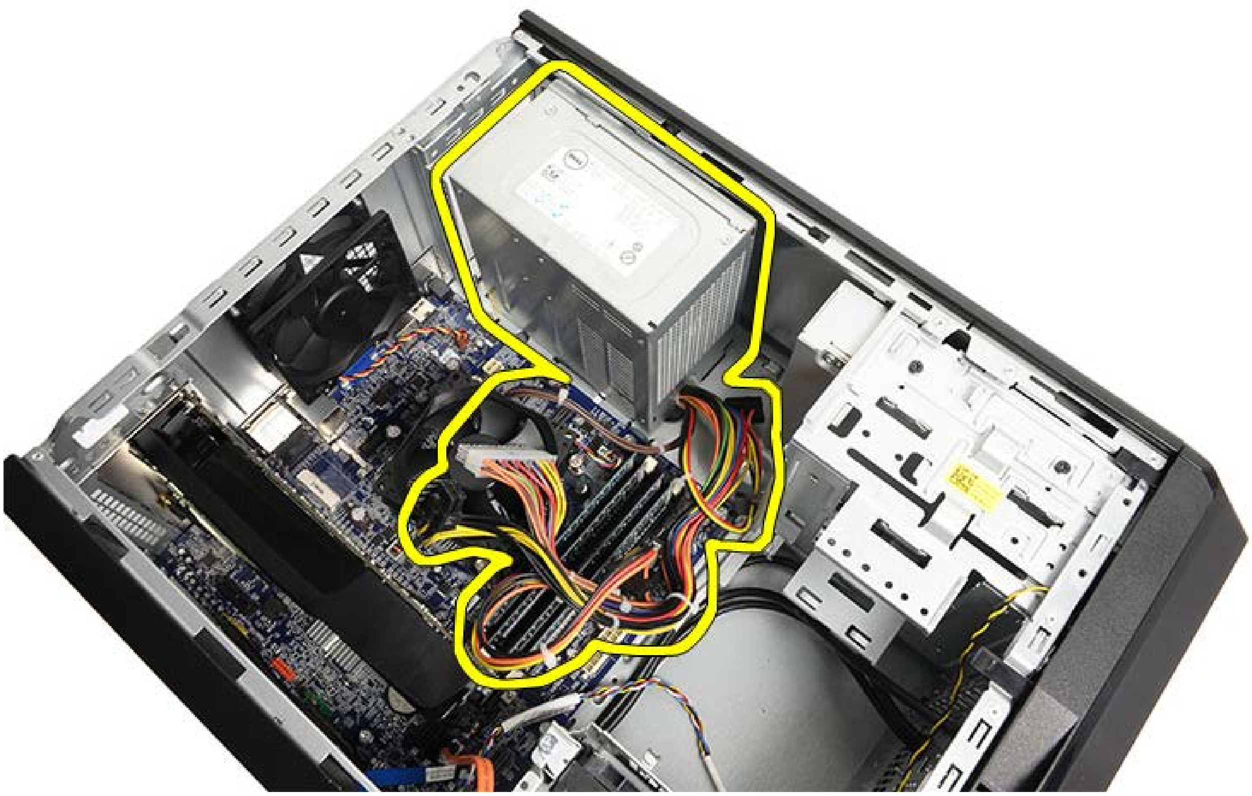
6. Remove the screws that secure the power supply to the computer chassis.



7. Push the blue release tab beside the power supply.
8. Slide the power supply towards the front of the computer.



9. Lift the power supply out of the computer.



Related tasks
[Installing Power Supply](#)

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Installing Power Supply

1. Install the power supply into the computer.
2. Slide the power supply towards the back of the computer till it snaps into place.
3. Replace and tighten the four screws that secure the power supply to the computer.
4. Thread and connect all the cables to the system board, expansion cards, and drives.
5. Install the video card holder.
6. Replace the computer cover.
7. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Power Supply

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Removing The Video Card

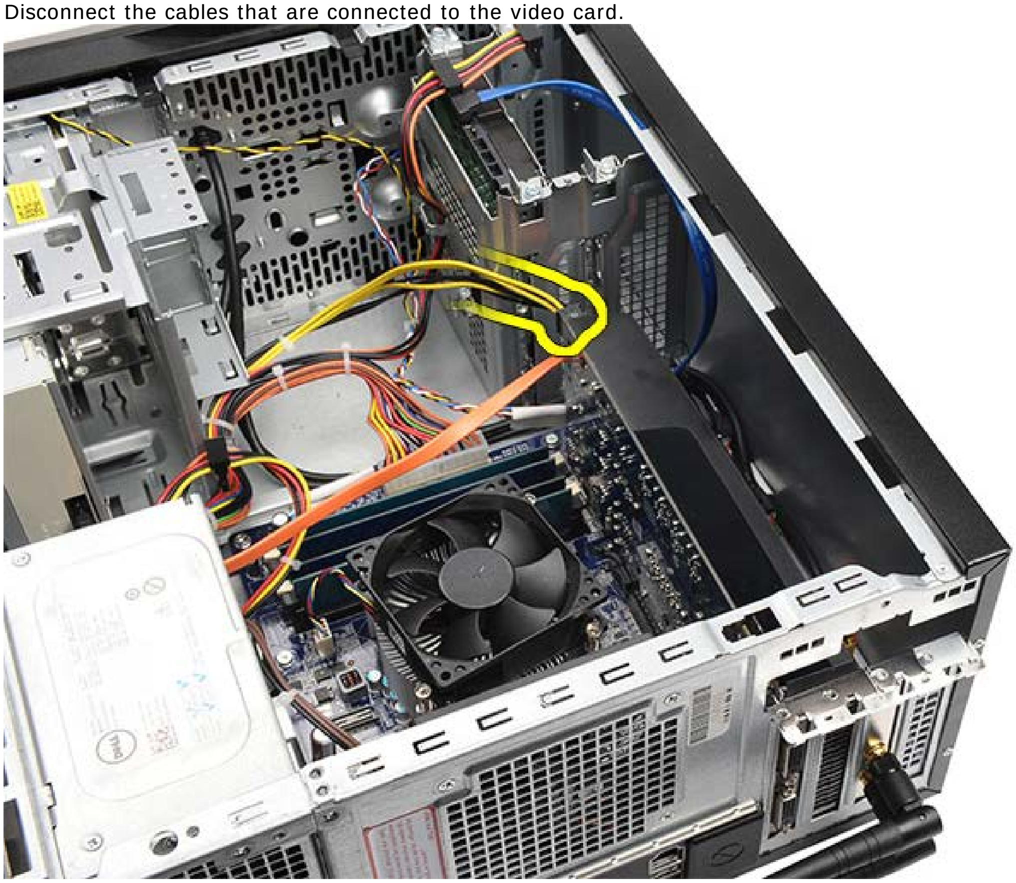
1. Follow the procedures in [Before Working Inside Your Computer]
2. Remove the [computer cover].
3. Remove the [video card holder].
4. Remove the screw that secures the metal securing tab to the computer.



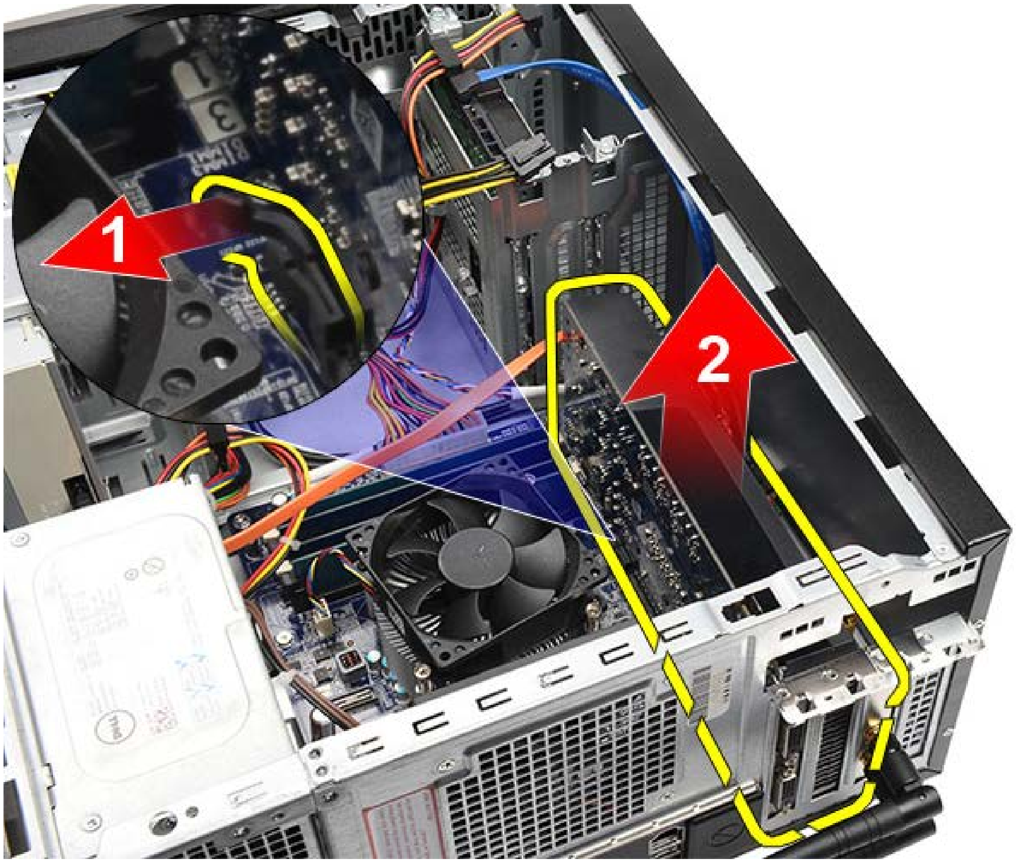
5. Remove the metal securing tab away from the computer.



6. Disconnect the cables that are connected to the video card.



7. If a PCI-express x16 video card is installed, press the securing tab.
8. While grasping the card by its top corners, ease it out of its slot on the system board.



Related tasks
Installing Video Card

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Installing Video Card

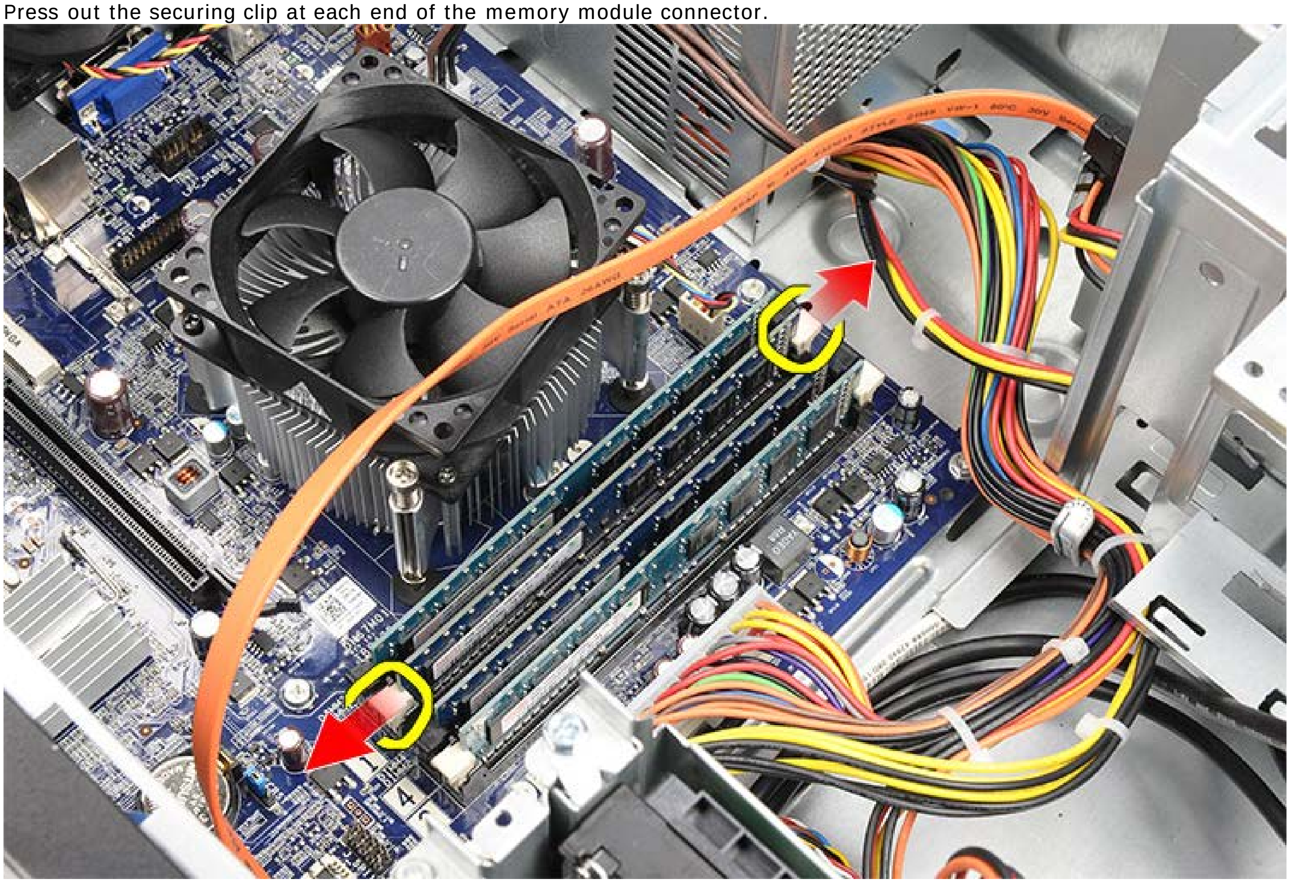
1. Insert the video card into its connector.
2. Connect any cables if required.
3. Install the metal securing tab to the computer.
4. Replace and tighten the screw that secures the video card to the computer.
5. Install the video card holder.
6. Replace the computer cover.
7. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Video Card

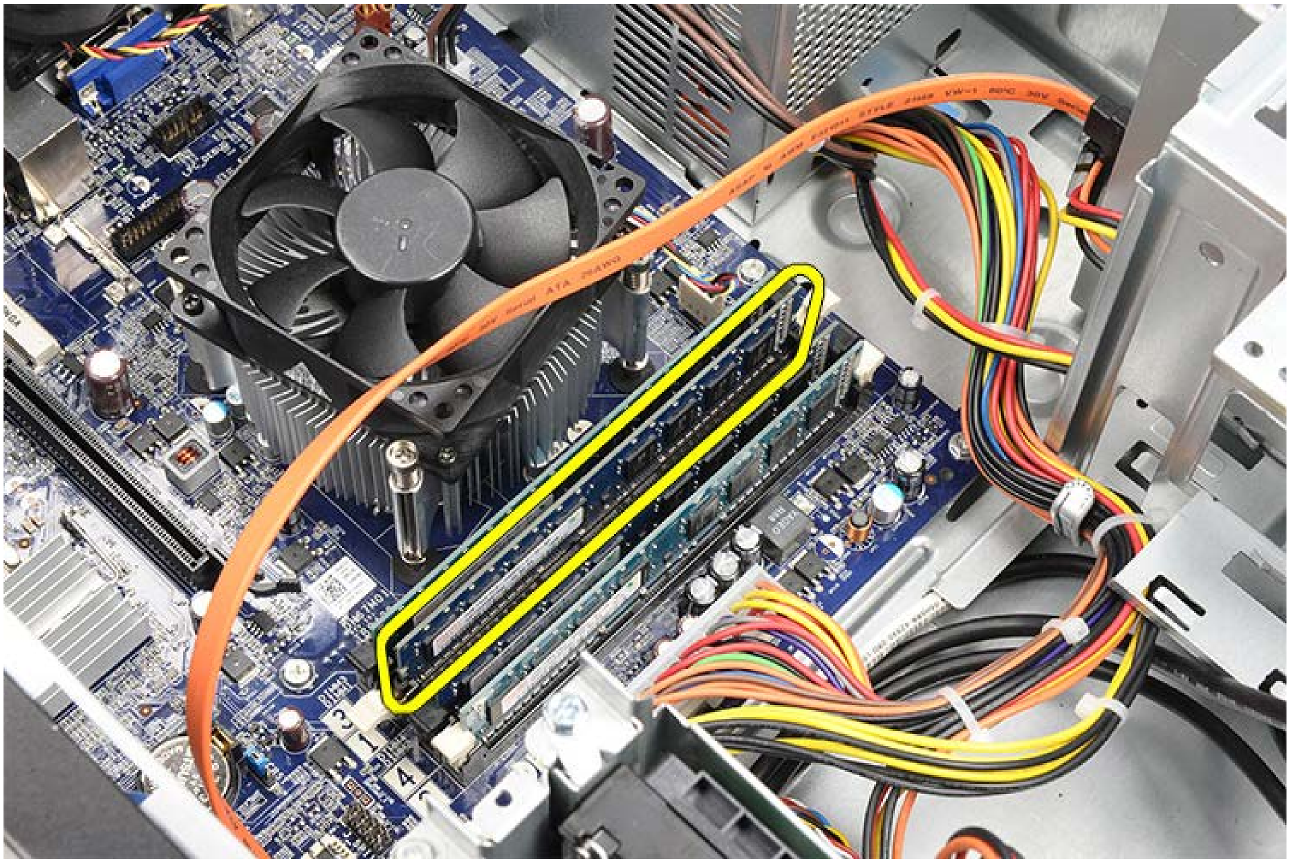
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Removing The Memory

1. Follow the procedures in Before Working Inside Your Computer
2. Remove the computer cover.
3. Remove the video card holder.
4. Press out the securing clip at each end of the memory module connector.



5. Grasp the memory module and pull it out of the memory module connector.



Related tasks
[Installing Memory](#)

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Installing The Memory

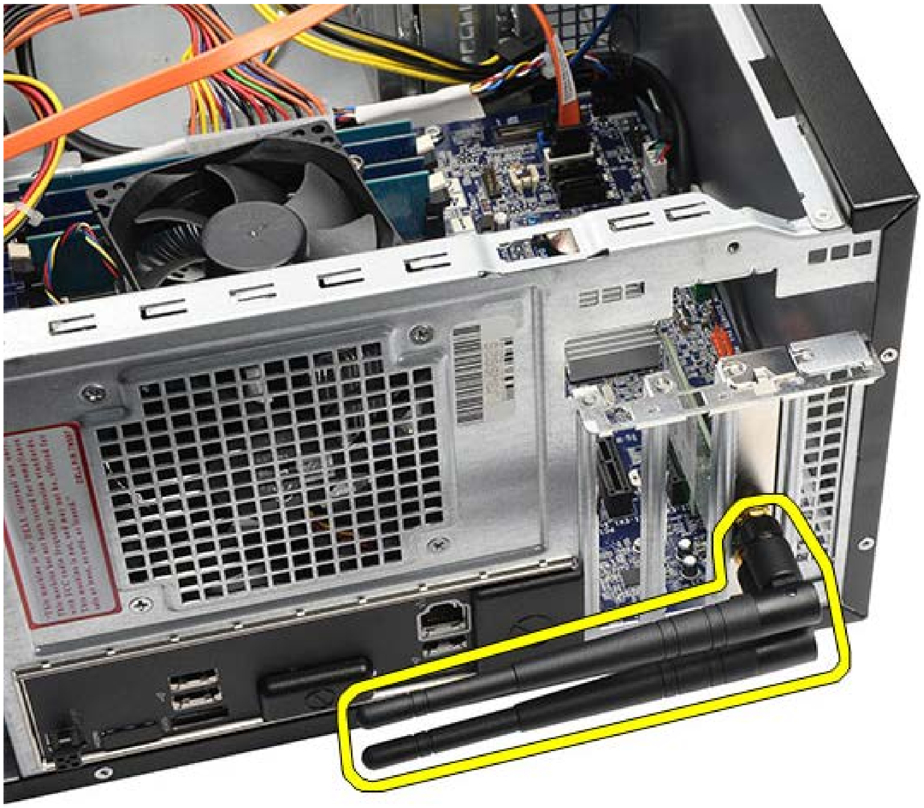
1. Push the memory module into the memory slot.
2. Press the clips to secure the memory module to the system board.
3. Replace the computer cover ().
4. Install the video card holder.
5. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Memory

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Removing The Expansion Card

1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Remove the video card holder.
4. Remove the video card.
5. Remove the antennas.



6. Hold the card at its top corners, and ease it out of its connector.



Related tasks

Installing Expansion Card

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Installing The Expansion Card

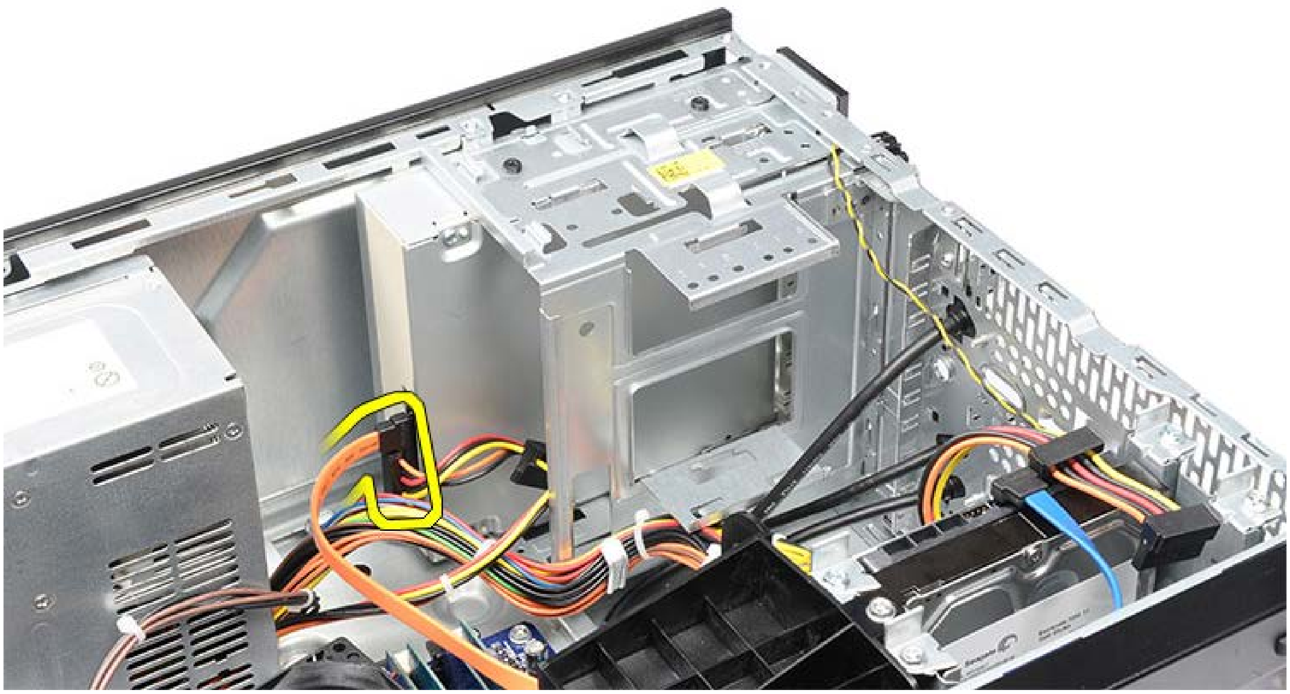
1. Push the expansion card into the card slot.
2. If needed, install and attach the antennas to the expansion card.
3. Install the video card.
4. Install the video card holder.
5. Replace the computer cover.
6. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Expansion Card

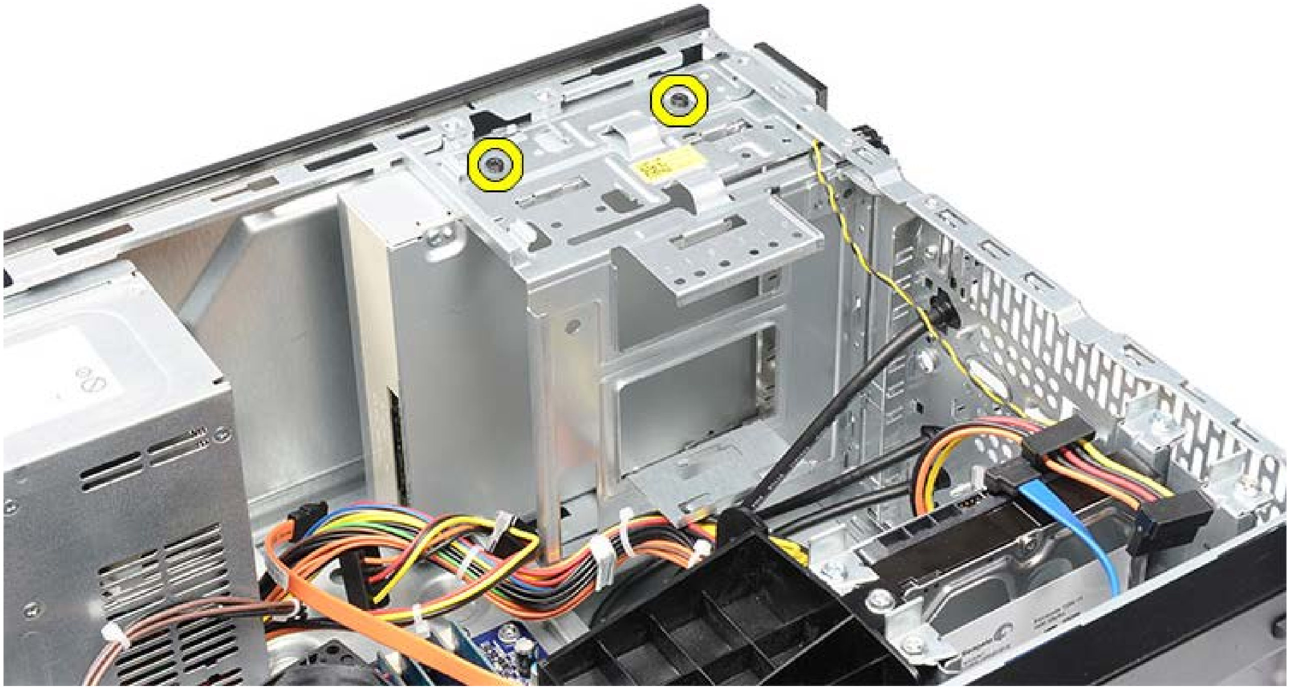
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Removing The Optical Drive

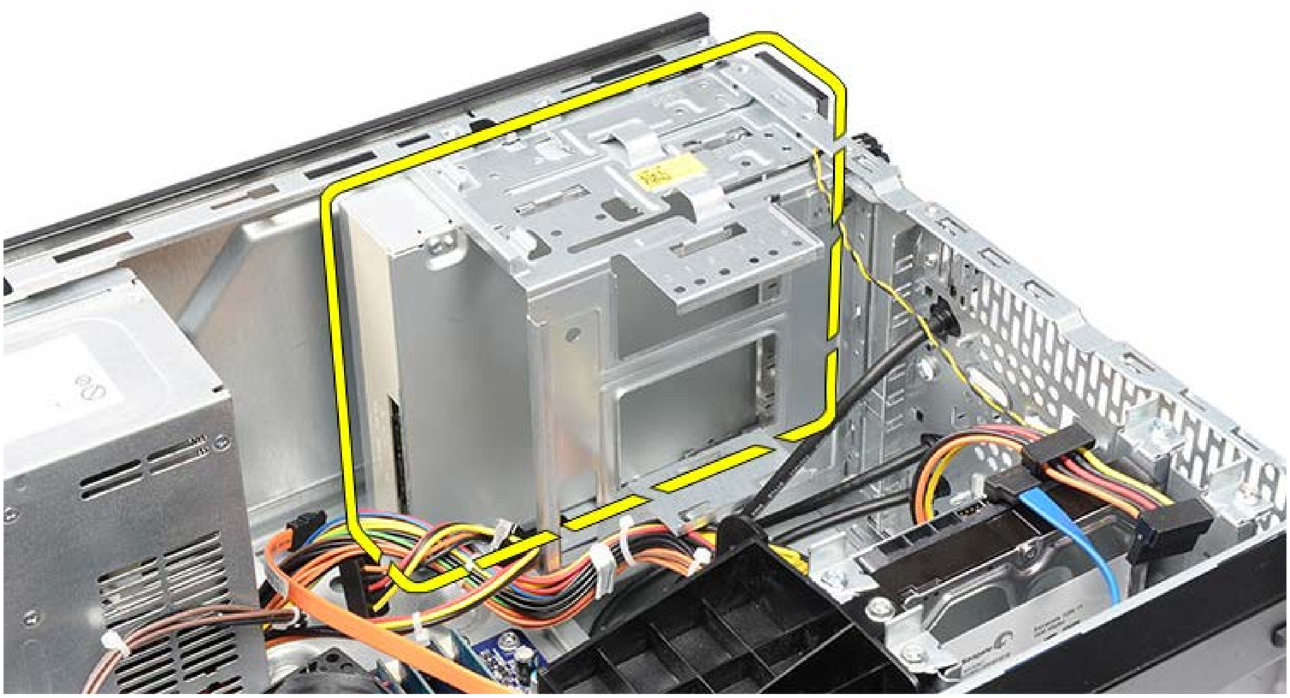
1. Follow the procedures in Before Working Inside Your Computer.
2. Remove the computer cover.
3. Remove the front bezel.
4. Disconnect the power cable and the data cable from the back of the optical drive.



5. Remove the screws that secure the optical drive to the drive cage.



6. Slide out the optical drive through the front of the computer.



Related tasks
[Installing Optical Drive]

Installing Optical Drive

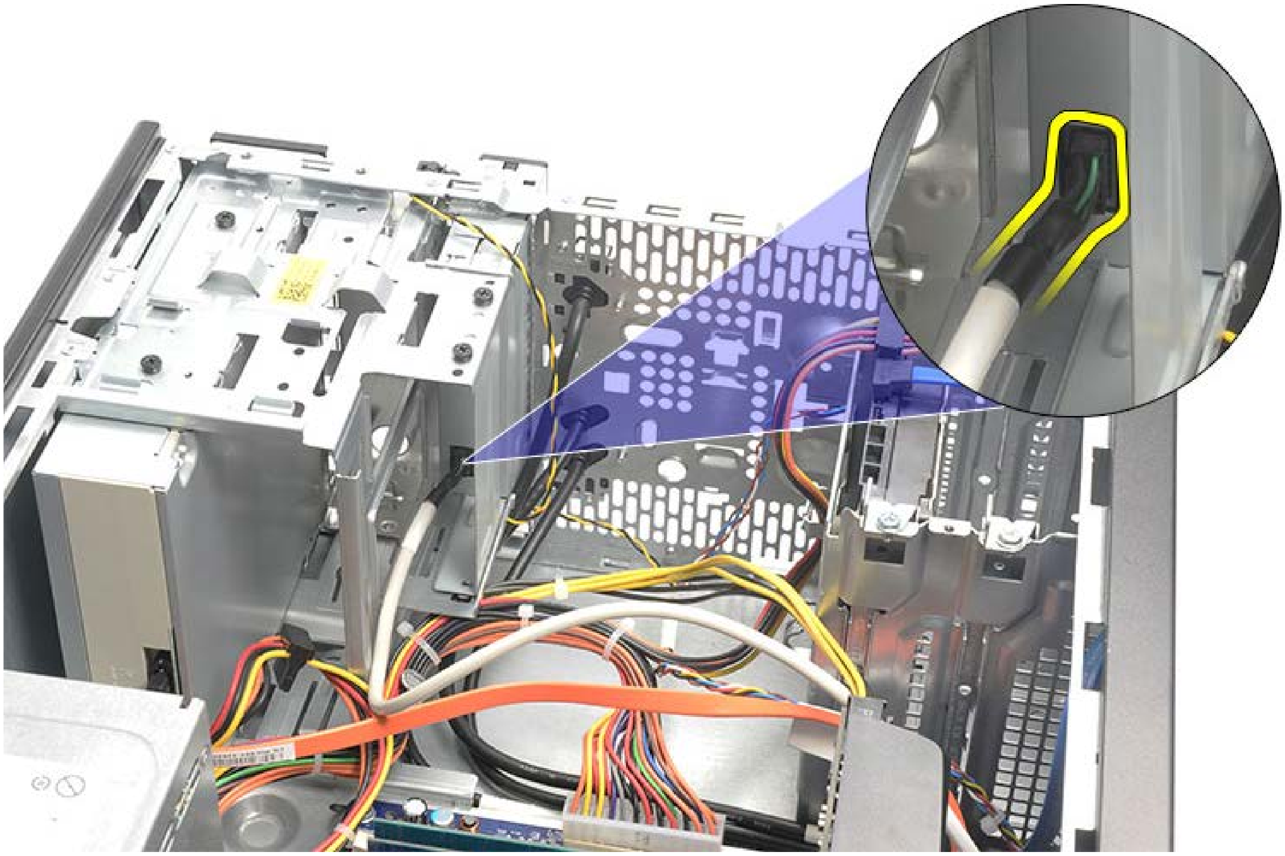
1. Slide the optical drive in through the front of the computer.
2. Replace the screws that secure the optical drive to the drive cage.
3. Connect the power cable and data cable to the optical drive.
4. Install the front bezel.
5. Replace the computer cover.
6. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Optical Drive

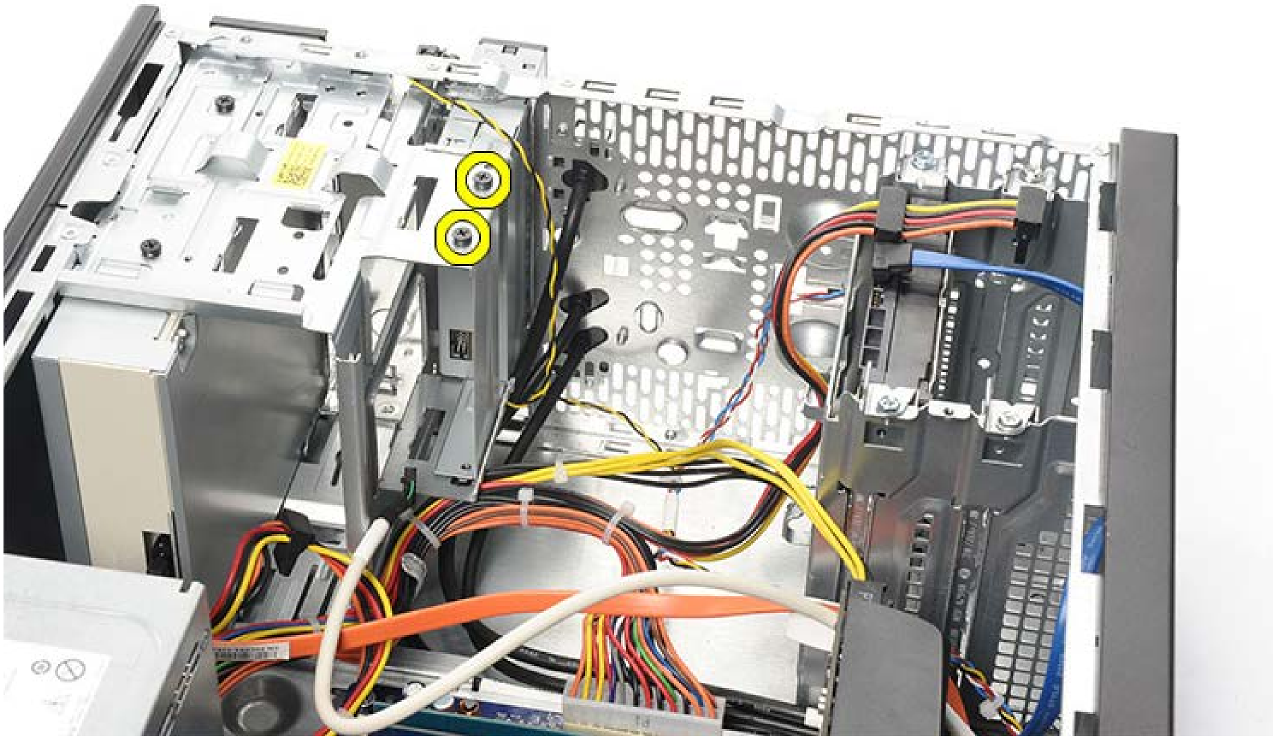
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Removing The Multimedia Card Reader

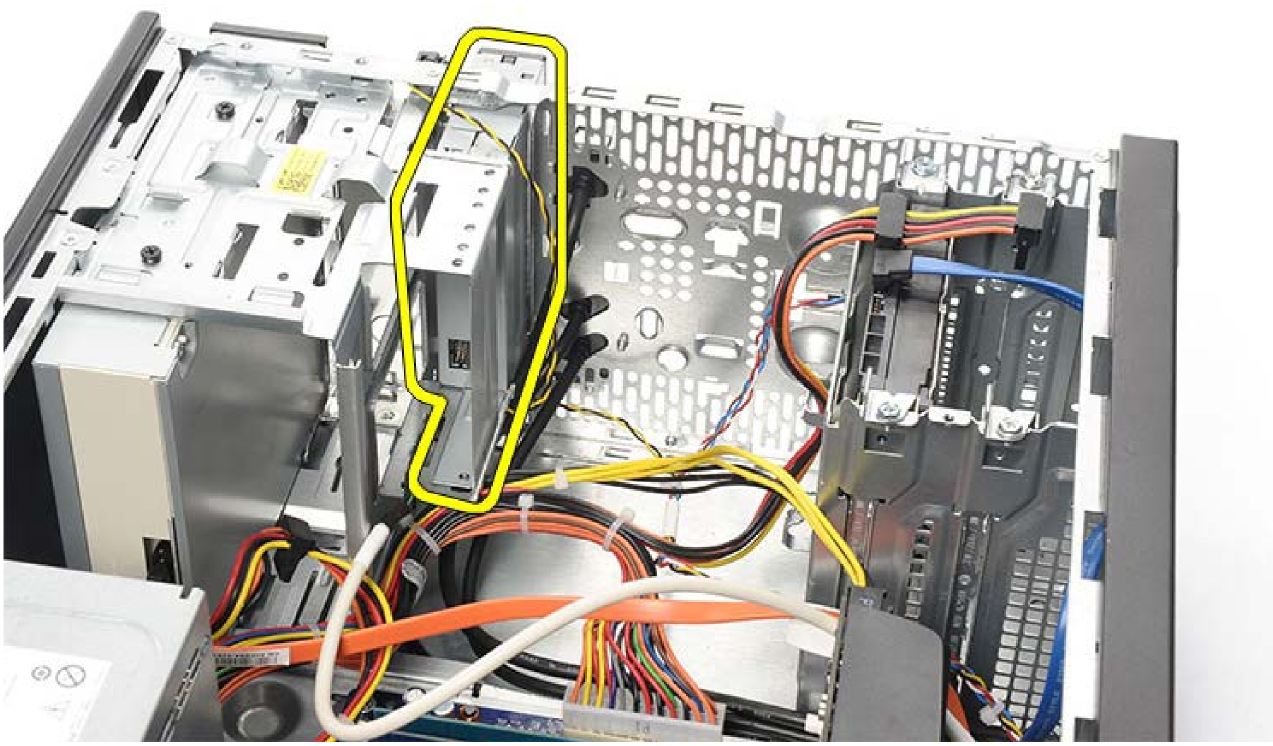
1. Follow the procedures in Before Working Inside Your Computer
2. Remove the computer cover.
3. Remove the front bezel.
4. Remove the video card holder.
5. Remove the video card.
6. Disconnect the data cable from the back of the multimedia card reader.



7. Remove the two screws that secure the multimedia card reader to the drive cage.



8. Slide the multimedia card reader out through the front of the computer.



Related tasks

Installing Multimedia Card Reader

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Installing Multimedia Card Reader

1. Slide the multimedia card-reader in through the front of the computer.
2. Replace and tighten the two screws securing the multimedia card-reader to the drive cage.
3. Connect the data cable to the multimedia card-reader.
4. Install the video card.
5. Install the video card holder.
6. Install the front bezel.
7. Replace the computer cover.
8. Follow the procedures in After Working Inside Your Computer.

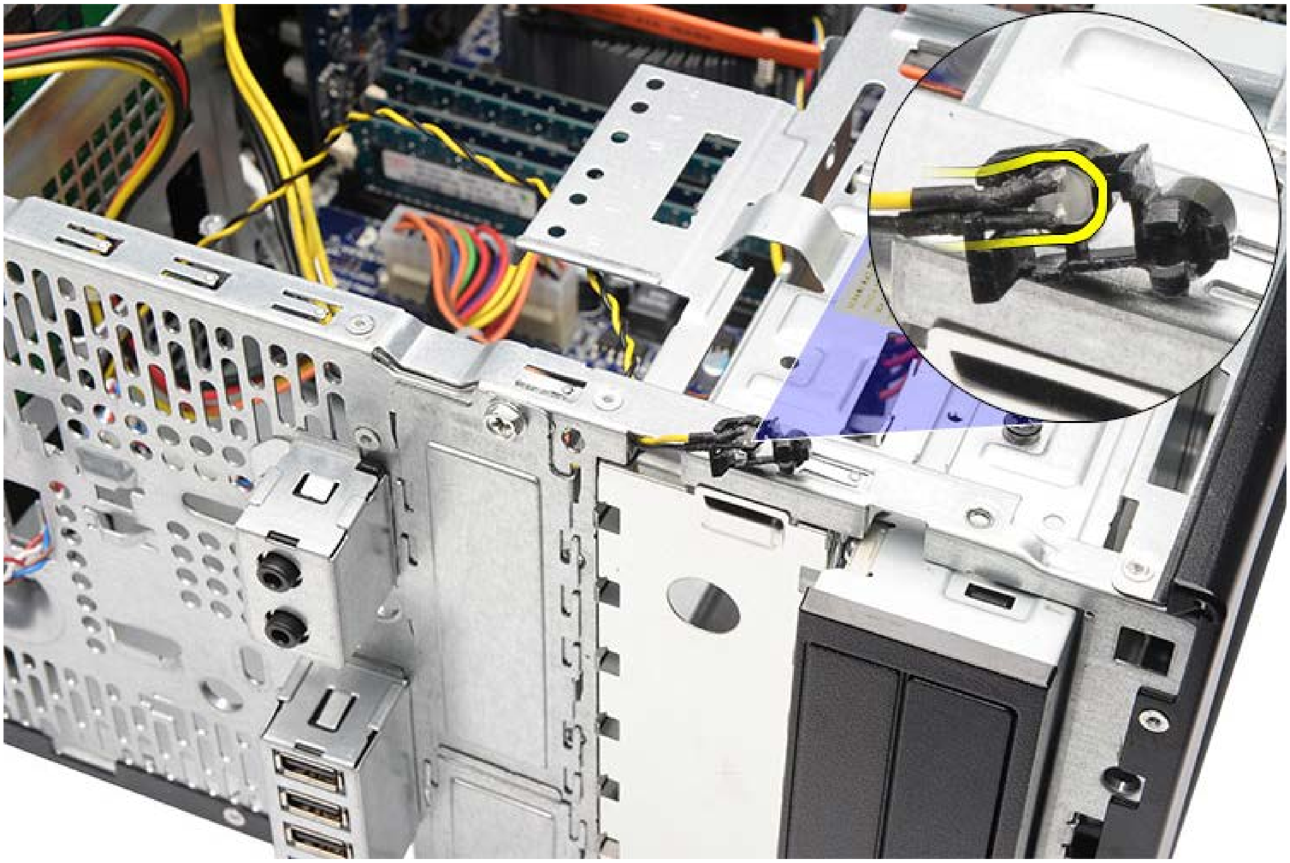
Related tasks
Removing Multimedia Card Reader

Removing The Power Button And Hard Drive Activity LED

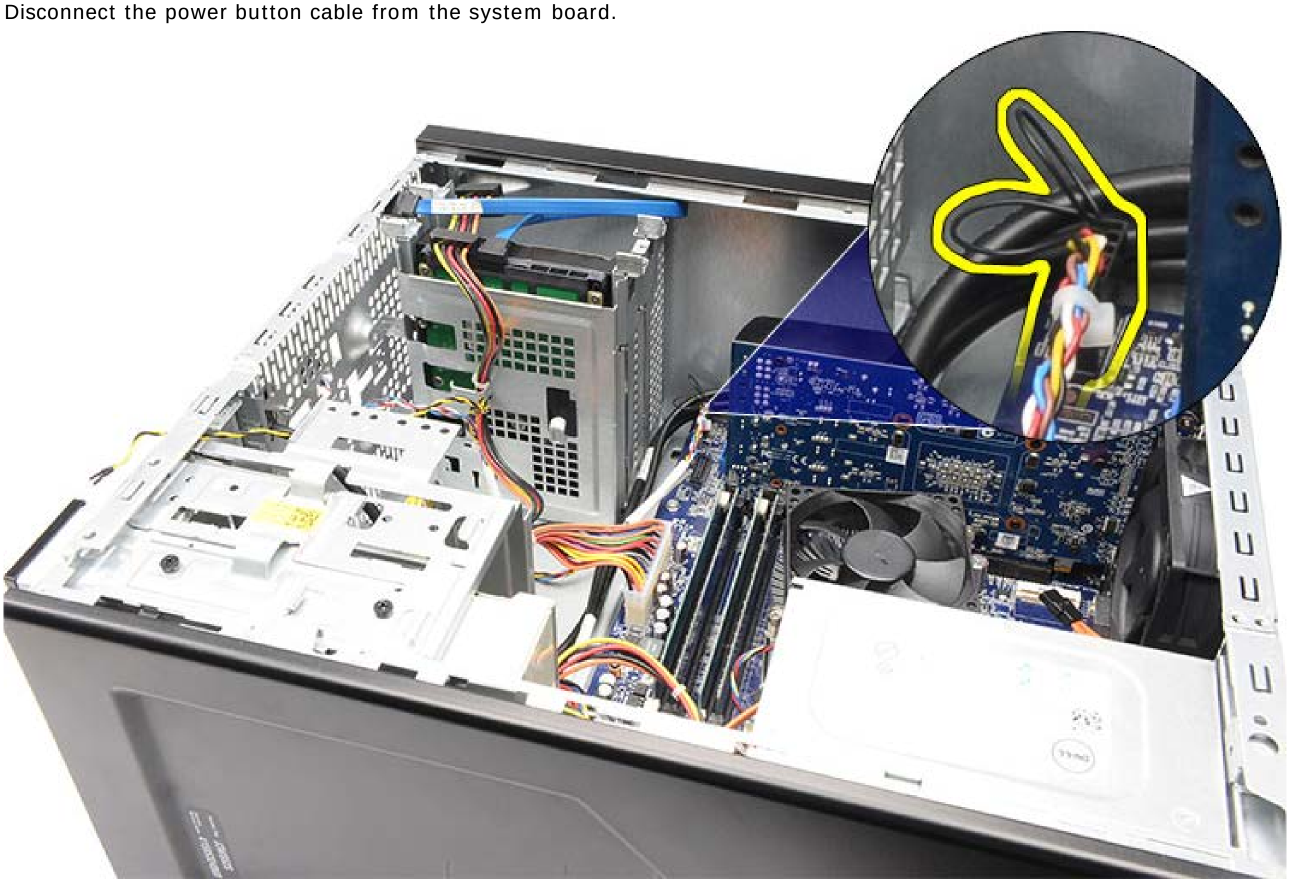
1. Follow the procedures in Before Working Inside Your Computer
2. Remove the system cover.
3. Remove the front bezel.
4. Remove the video card holder.
5. Push in the power button and hard drive activity LED to remove them.



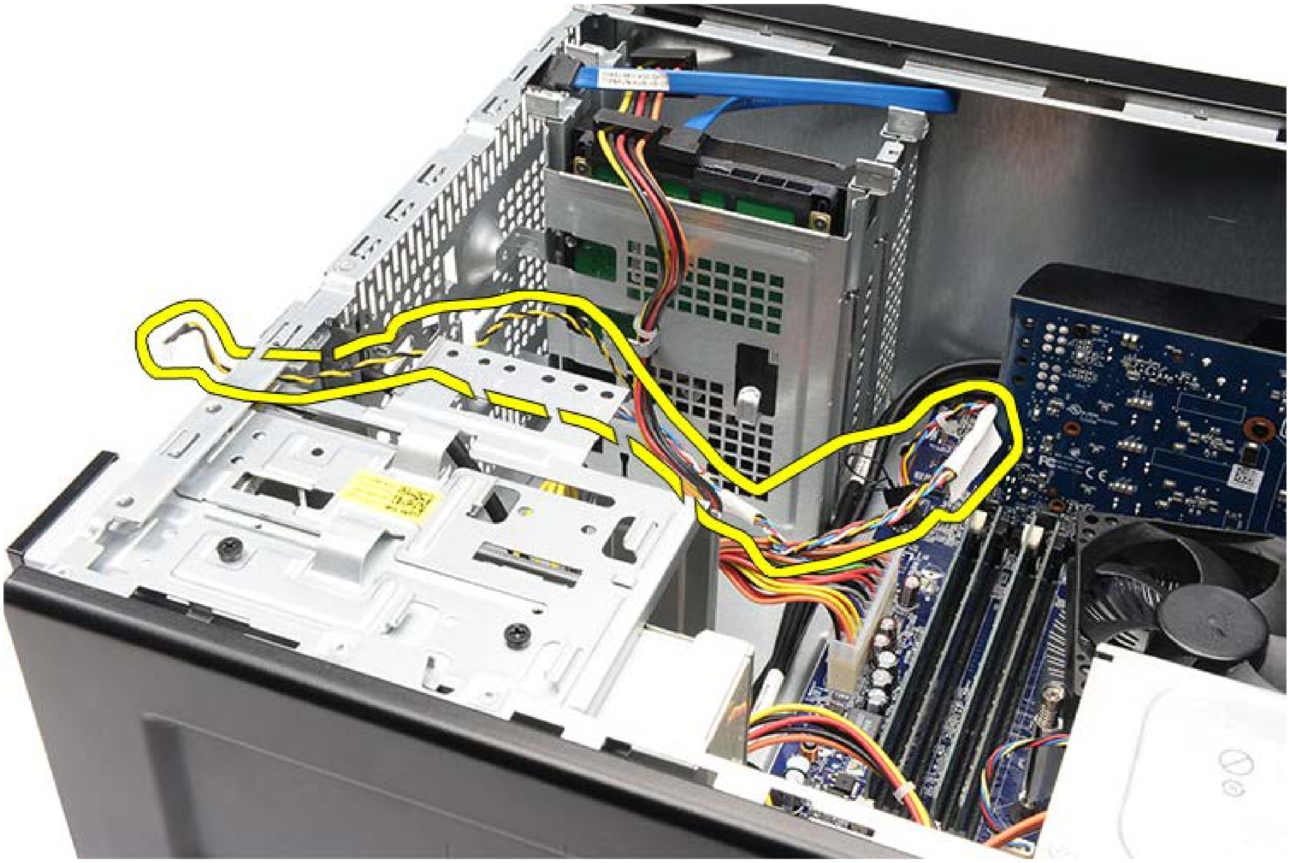
6. Gently remove the hard drive activity LED from the plastic clip.



7. Disconnect the power button cable from the system board.



8. Unthread the power button cable from the routing clips.



Related tasks

Installing Power Button And Hard Drive Activity LED

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Installing Power Button And Hard Drive Activity LED

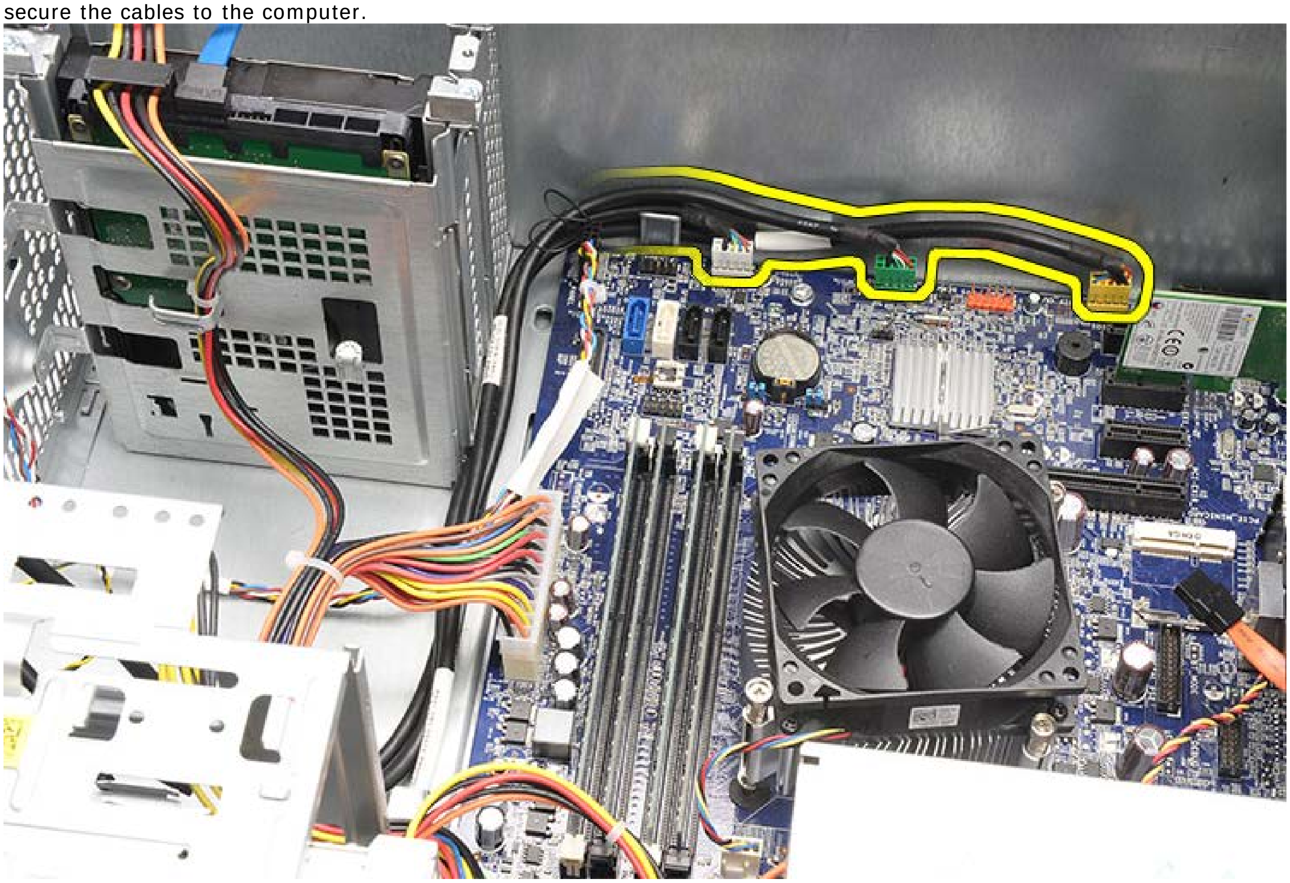
1. Thread the power-button cable through the routing clips.
2. Connect the power-button cable to the system board.
3. Insert the hard drive activity LED into the plastic clip.
4. Insert the power button and hard drive activity LED into the front of the computer.
5. Install the video card holder.
6. Install the front bezel.
7. Replace the computer cover.
8. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing Power And Hard Drive Activity LED

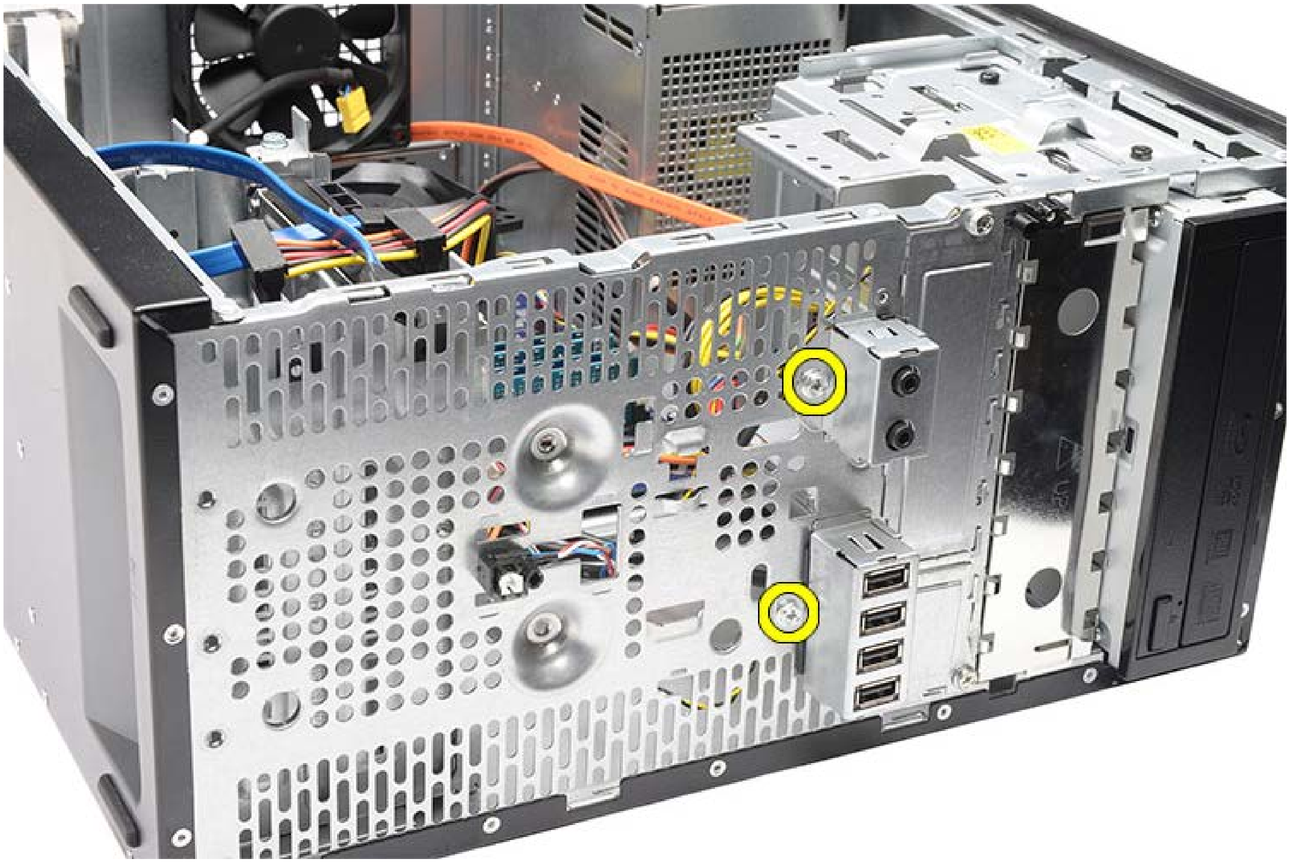
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Removing Front I/O Panel

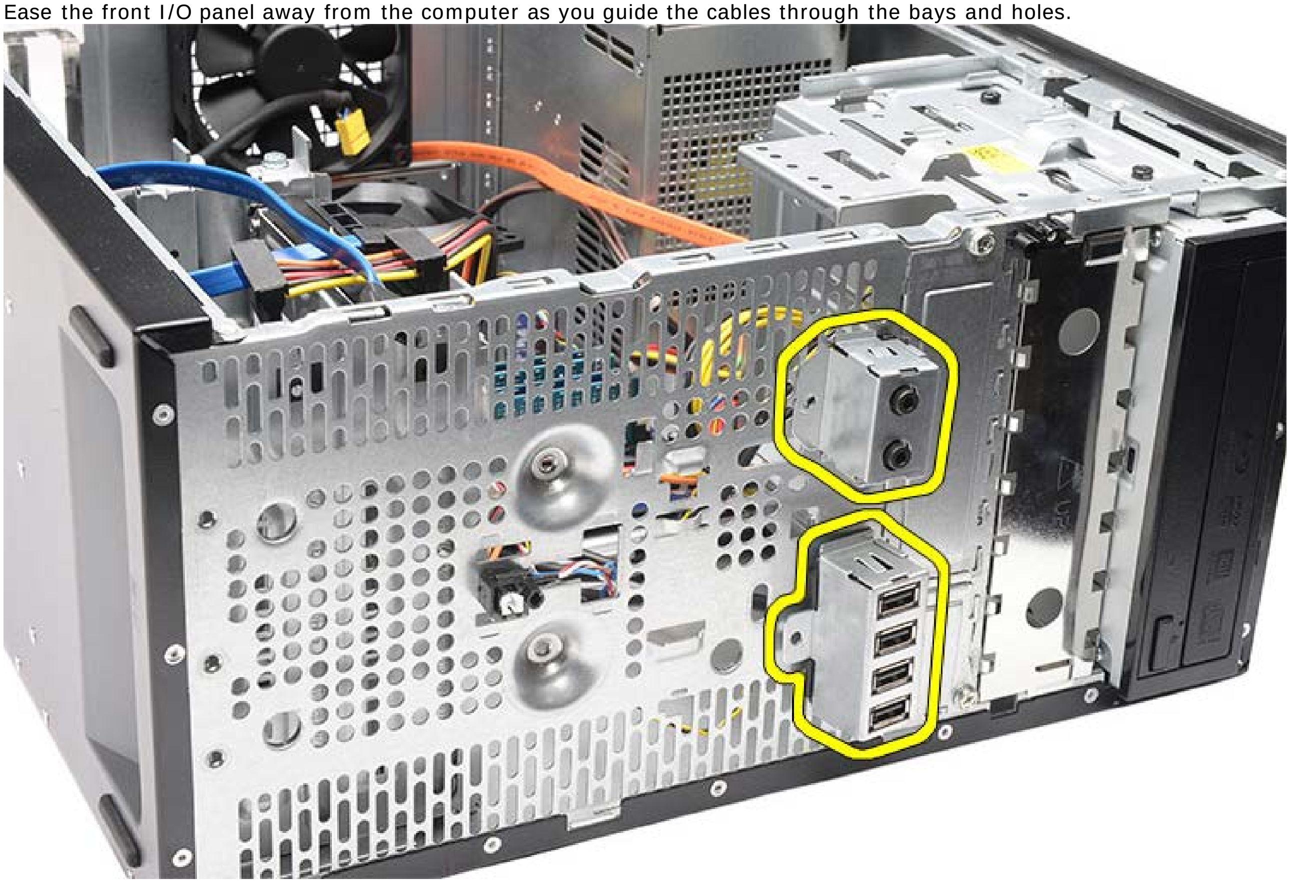
1. Follow the procedures in Before Working Inside Your Computer
2. Remove the computer cover.
3. Remove the front bezel.
4. Remove the video card holder.
5. Remove the video card.
6. Disconnect the three front I/O cables from the system board. Unthread the cables from the securing clips, if present, that secure the cables to the computer.



7. Remove the two screws that secure the front I/O panel to the computer.



8. Ease the front I/O panel away from the computer as you guide the cables through the bays and holes.



Related tasks
[Installing Front I/O]()

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Installing Front I/O Panel

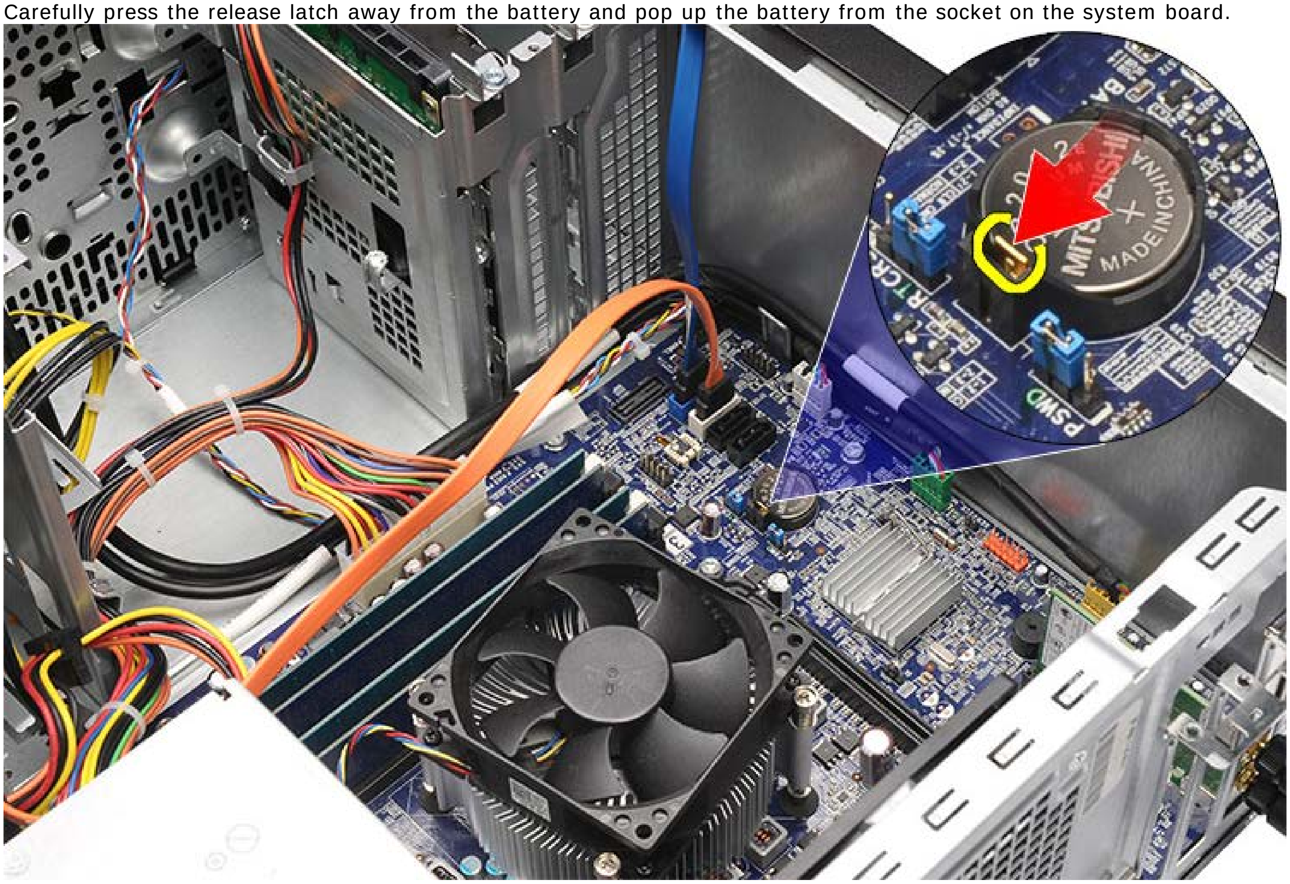
1. Route the front I/O panel cables through the bays and holes.
2. Install the two screws that secure the front I/O panel to the computer.
3. Thread the cables through the routing clips if present and then connect the three front I/O cables to the system board.
4. Install the video card.
5. Install the video card holder.
6. Install the front bezel.
7. Replace the computer cover ().
8. Follow the procedures in After Working Inside Your Computer.

Related tasks
Installing Front I/O Panel

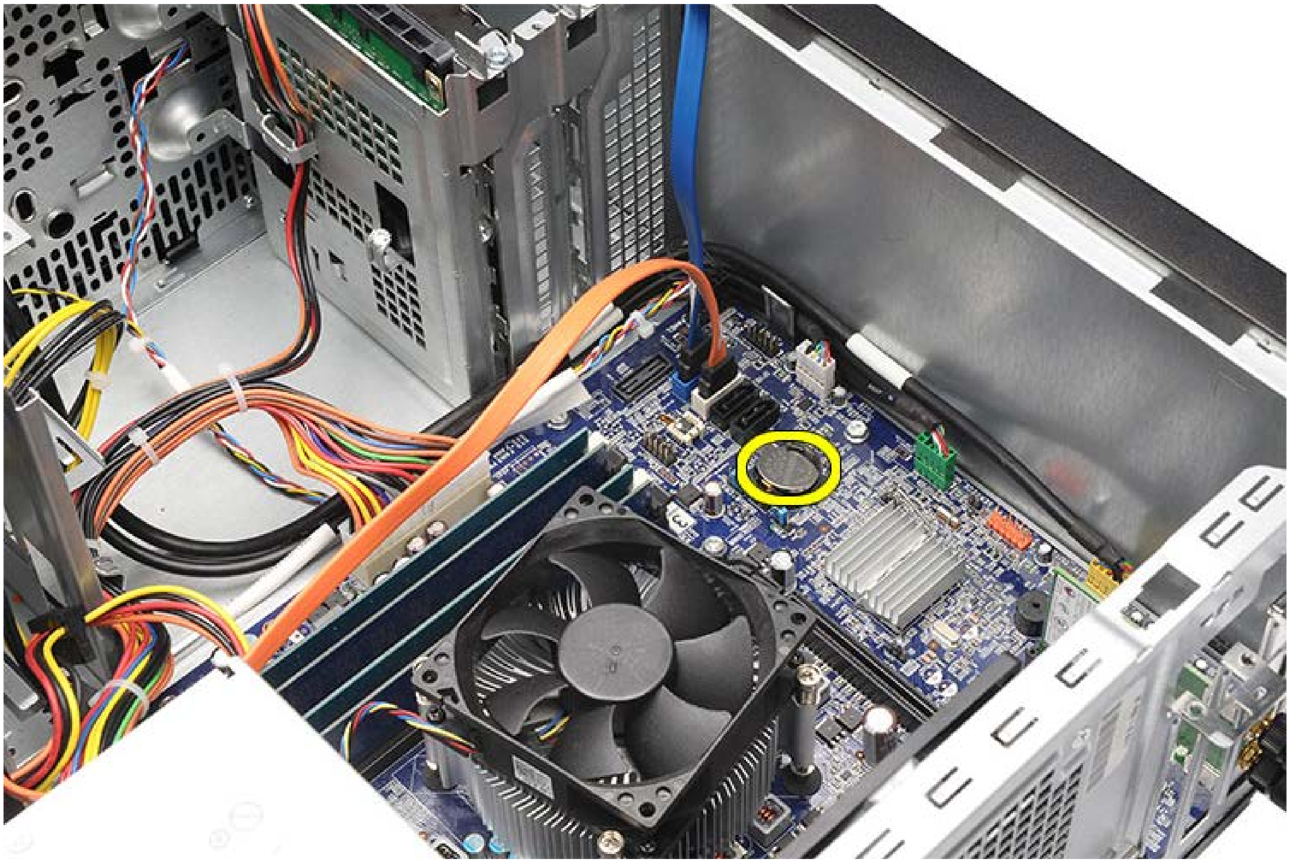
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Removing The Coin-Cell Battery

1. Follow the procedures in Before Working Inside Your Computer
2. Remove the computer cover.
3. Remove the video card holder.
4. Remove the video card.
5. Carefully press the release latch away from the battery and pop up the battery from the socket on the system board.



6. Lift the coin-cell battery out of the computer.



Related tasks
Installing Coin-Cell Battery

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Installing The Coin-Cell Battery

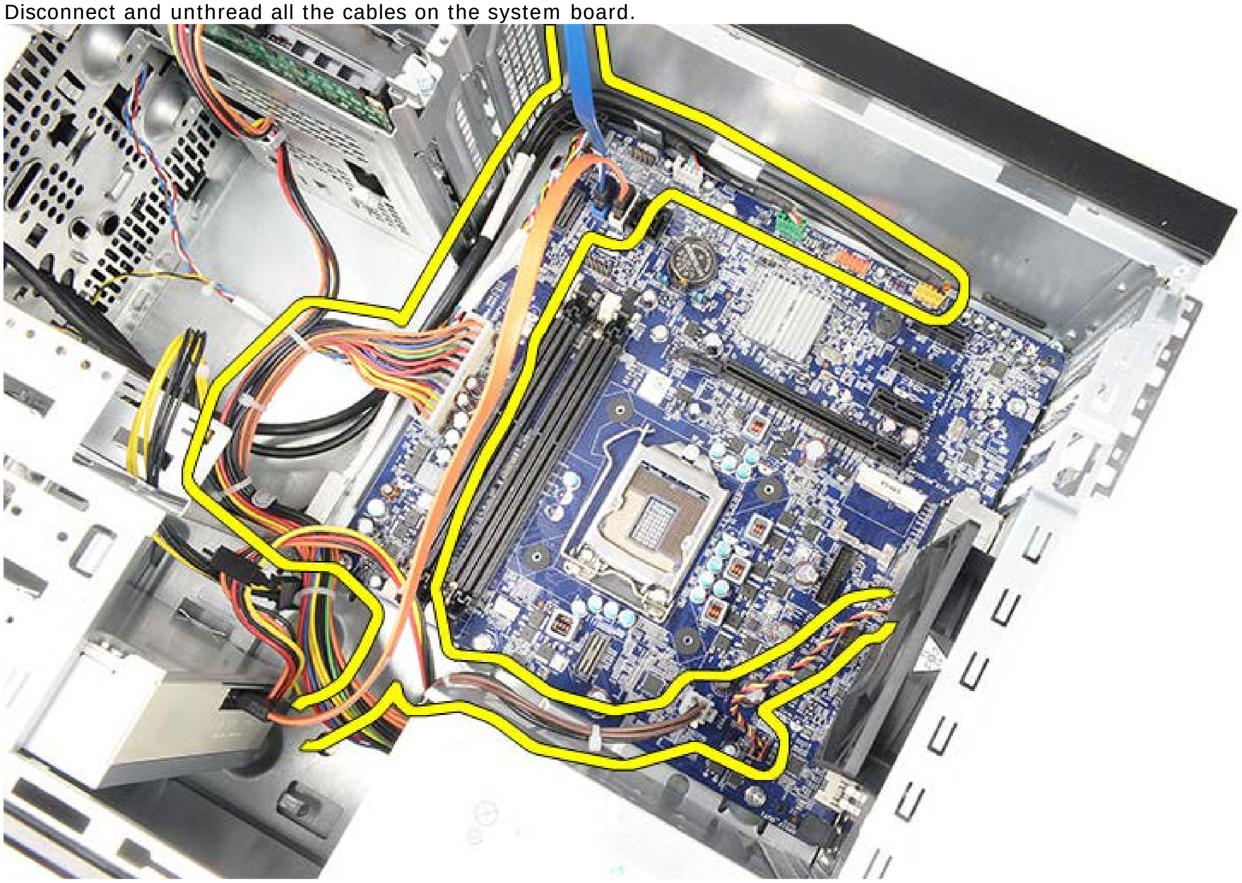
1. Install the coin-cell battery into the socket on the system board.
2. Press-in the coin-cell battery till it snaps into the socket.
3. Install the video card.
4. Install the video card holder.
5. Replace the computer cover.
6. Follow the procedures in After Working Inside Your Computer

Related tasks
Removing Coin-Cell Battery

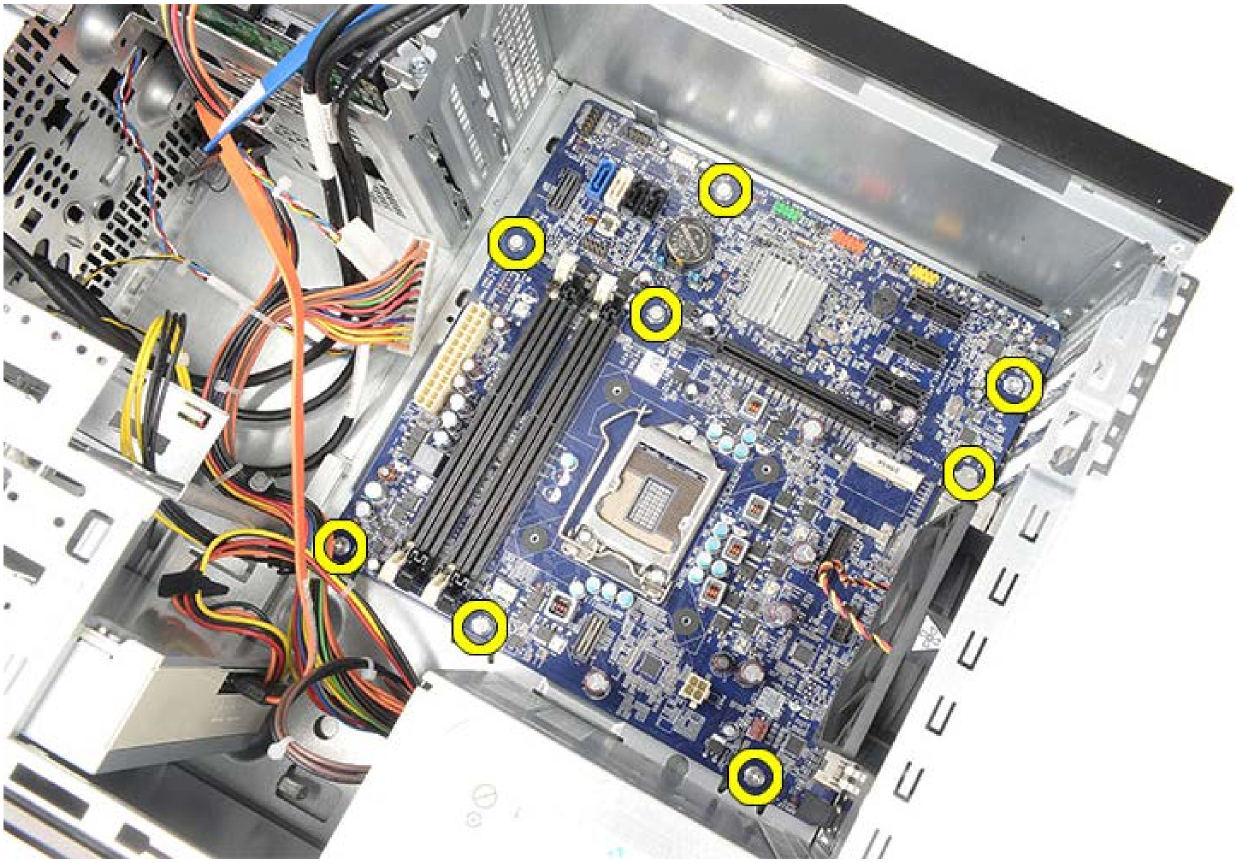
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Removing The System Board

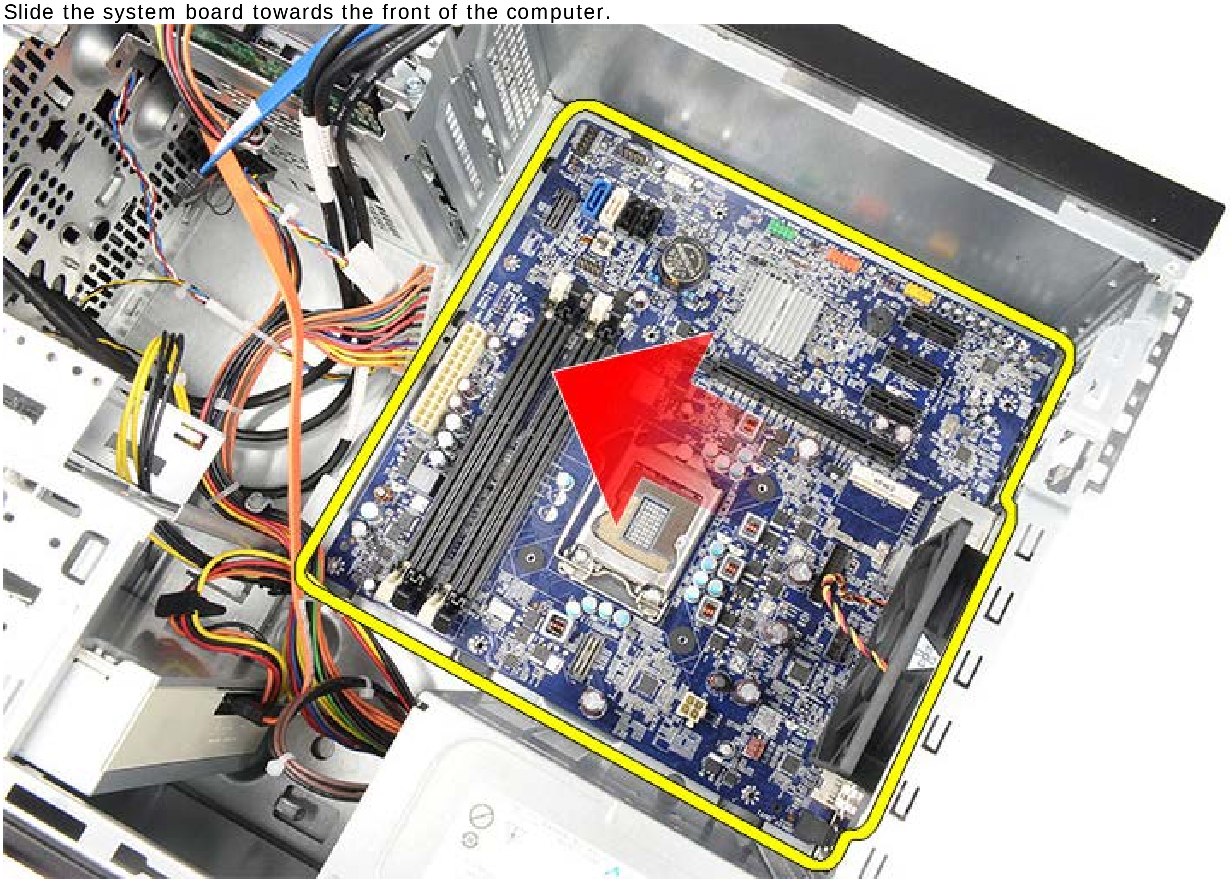
1. Follow the procedures in Before Working Inside Your Computer
2. Remove the computer cover.
3. Remove the front bezel.
4. Remove the video card holder.
5. Remove the video card.
6. Remove the expansion card.
7. Remove the memory.
8. Remove the processor.
9. Disconnect and unthread all the cables on the system board.



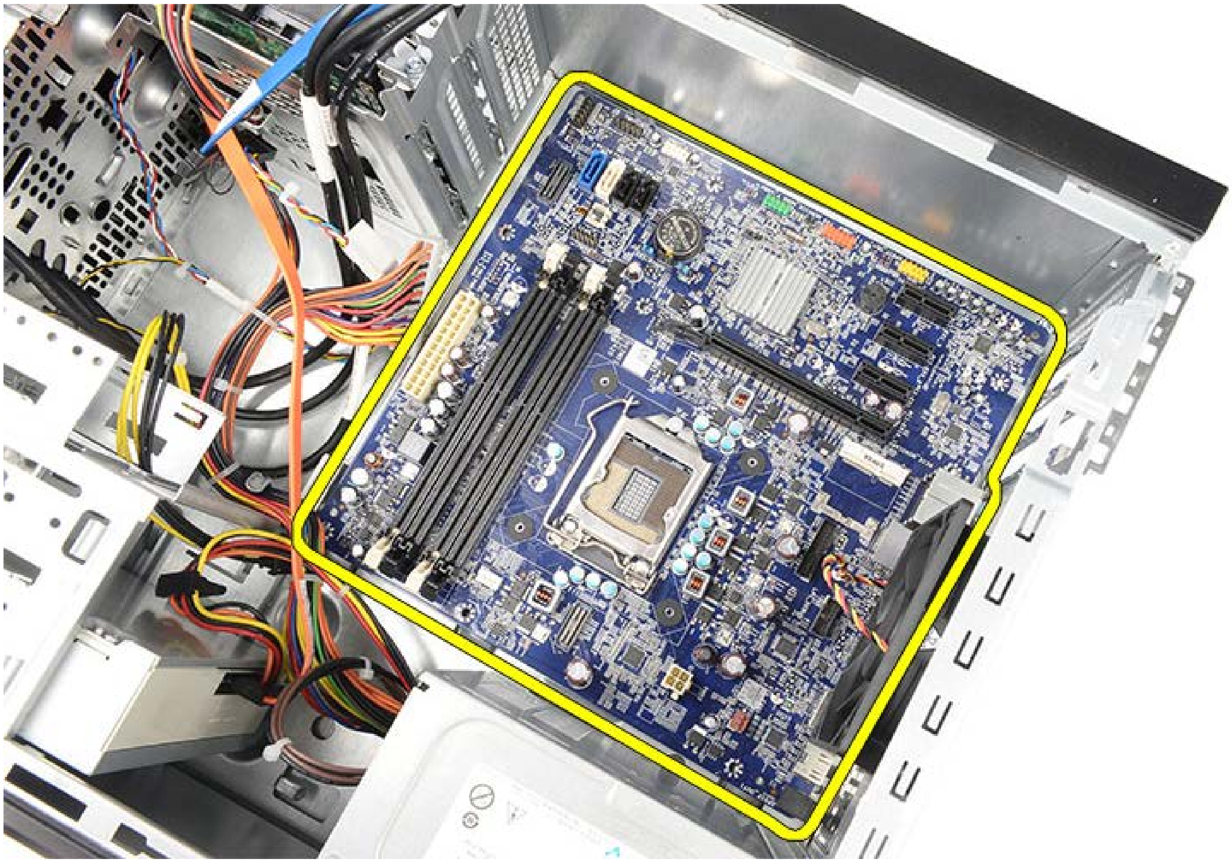
10. Remove the eight screws that secure the system board to the computer.



11. Slide the system board towards the front of the computer.



12. Carefully, lift the system board out of the computer.



Related tasks

Installing System Board

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Installing The System Board

1. Carefully place the system board into the computer.
2. Slide the system board towards the back of the computer.
3. Replace and tighten the eight screws that secure the system board to the computer.
4. Thread and connect all the cables to the system board.
5. Install the heatsink and processor.
6. Install the memory.
7. Install the video card.
8. Install the video card holder.
9. Install the front bezel.
10. Replace the computer cover.
11. Follow the procedures in After Working Inside Your Computer.

Related tasks
Removing System Board

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Overview

System Setup allows you to:

- change the system configuration information after you add, change, or remove any hardware in your computer.
- set or change a user-selectable option such as the user password.
- read the current amount of memory or set the type of hard drive installed.

Before you use System Setup, it is recommended that you write down the System Setup screen information for future reference.

CAUTION: Unless you are an expert computer user, do not change the settings for this program. Certain changes can cause your computer to work incorrectly.

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Entering System Setup

1. Turn on (or restart) your computer.
2. When the blue DELL logo is displayed, you must watch for the F2 prompt to appear.
3. Once the F2 prompt appears, press <F2> immediately.

NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it to display, and then press <F2> . If you press <F2> before you are prompted, this keystroke will be lost.

4. If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then, shut down your computer and try again.

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System Setup Screens

<table>
<tr><td colspan="3">Menu — Appears on top of the System Setup window. This field provides a menu to access the System Setup options. Press < Left Arrow > and < Right Arrow > keys to navigate. As a Menu option is highlighted, the Options List lists the options that define the hardware installed on your computer.</td></tr>
<tr><td>Options List — Appears on the left side of the System Setup window. The field lists features that define the configuration of your computer, including installed hardware, power conservation, and security features. Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the Options Fielddisplays the option's current and available settings.</td><td>Options Field — Appears on the right side of Options List and contains information about each option listed in the Options List. In this field you can view information about your computer and make changes to your current settings. Press < Enter> to make changes to your current settings. Press <ESC> to return to the Options List.

NOTE: Not all settings listed in the Options Field are changeable.</td><td>Help — Appears on the right side of the System Setup window and contains help information about the option selected in Options List.</td></tr>
<tr><td colspan="3">Key Functions — Appears below the Options Field and lists keys and their functions within the active system setup field.</td></tr>
</table>

Use the following keys to navigate through the System Setup screens:

Keystroke	Action
< F2 >	Displays information on any selected item in the System Setup.
< Esc >	Exit from current view or switch the current view to the **Exit** page in the System Setup.
< Up Arrow > or < Down Arrow >	Select an item to display.
< Left Arrow > or < Right Arrow >	Select a menu to display.

– or +	Change existing item value.
< Enter >	Select the sub menu or execute command.
< F9 >	Load setup default.
< F10 >	Save current configuration and exit System Setup.

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System Setup Options

Main

System Information	Displays the computer model number.
BIOS Version	Displays the BIOS revision.
System Date	Resets the date on the computer's internal calendar.
System Time	Resets the time on the computer's internal clock.
Service Tag	Displays the service tag of your computer.
Asset Tag	Displays the asset tag of your computer.
Processor Type	Displays the type of processor.
L2 Cache Size	Displays the processor L2 cache size.
L3 Cache Size	Displays the processor L3 cache size.
Memory Installed	Displays the total computer memory.
Memory Speed	Displays the memory speed.
Memory Technology	Displays the type and technology.
Memory Channel	Displays the channel mode (single or dual channel).
SATA 0	Displays the model number and capacity of the hard drive.
SATA 1	Displays the model number and capacity of the hard drive.
SATA 2	Displays the model number and capacity of the hard drive.
SATA 3	Displays the model number and capacity of the hard drive.
eSATA	Displays the model number and capacity of an eSATA hard drive.

Advanced

System Configuration		
Hyper-	Enable or	Default:

threading	disable processor hyper-threading.	Enabled
Active Processor Cores	Displays the number of active cores.	Default: All
Limit CPUID Value	Enable or disable the Limit CPUID Value feature.	Default: Enabled
CPU XD Support	Enable or disable the CPU XD feature.	Default: Enabled
Intel Virtualization Technology	Enable or disable the Intel Virtualization feature.	Default: Enabled
Intel SpeedStep	Enable or disable the Intel SpeedStep feature.	Default: Enabled
Intel Turbo Boost Technology	Enable or disable the Intel Boost Technology feature.	Default: Enabled
CPU C6 Report	Enable or disable the CPU C6 Report.	Default: Enabled
System Configuration		
Onboard Audio Controller	Enable or disable the onboard audio controller.	Default: Enabled
Onboard LAN Controller	Enable or disable the onboard LAN controller.	Default: Enabled
Onboard LAN Boot ROM	Enable or disable the onboard LAN boot ROM.	Default: Disabled
SATA Mode	Allows you to choose the SATA operation mode.	Default: AHCI
eSATA Port	Enable or disable the eSATA port.	Default: Enabled
USB Controller	Enable or disable the USB controller.	Default: Enabled
Onboard Card Reader	Enable or disable the onboard card reader.	Default: Enabled
Power Management		

Restore AC Power Loss	Allows the computer to restore the AC power Loss.	Default: Power Off
Wake On LAN from S4/S5	Allows the computer to be remotely turned on.	Default: Enabled
USB Powershare in S4/S5 State	Allows the computer to be remotely turned on.	Default: Enabled
USB Powershare in Sleep State	Enable or disable the USB ports in sleep state.	Default: Normal
Auto Power On	Enable or disable the computer to power on automatically.	Default: Disabled
Post Behaviour		
Bootup NumLock State	Enable or disable the NumLock State light during POST.	Default: On
Keyboard Error Report	Enable or disable the Keyboard Error Report to be displayed during POST.	Default: Enabled

Security

Unlock Setup Status	Specifies whether a setup password has been assigned.
Admin Password Status	Specifies whether an admin password has been assigned.
Admin Password	Allows you to set an admin password.
Boot Menu Security	Allows you to unlock a locked system setup.

Boot

The Boot tab allows you to change the boot sequence.

Exit

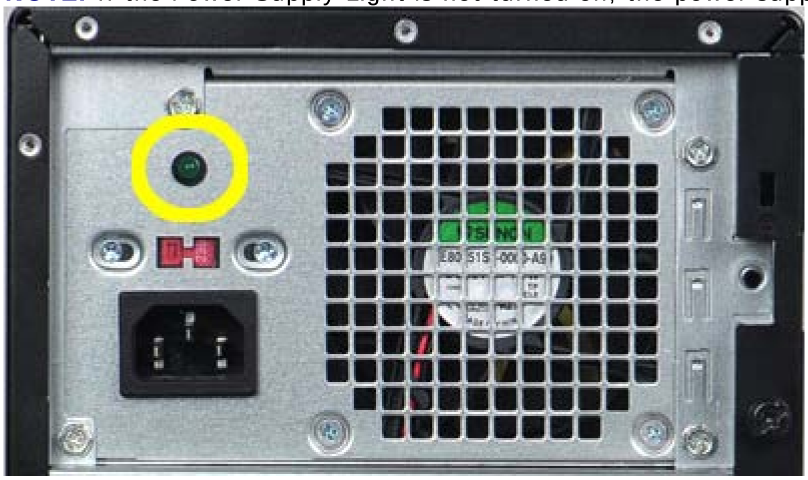
This section allows you to save, discard, and load default settings before exiting from System Setup.

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Power Supply Light

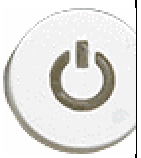
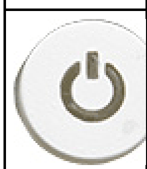
Power Supply light is lit by a signal in the power supply called Power_Good (PG). When the +3.3 V, +5 V, and +12 Vrails are up and within spec, the PG signal turns on, lighting the self-test LED. By removing the cable harness in units that do not pass this test, the customer or technician can isolate the failure's cause to an attached device of the power supply.

NOTE: If the Power Supply Light is not turned on, the power supply is defective.



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Power Lights

Power Button Status		Cause	Troubleshooting Steps
	OFF	The computer is either turned off or is not receiving power.	• Reseat the power cable in the power connector on the back of the computer and the electrical outlet. • If the computer is plugged into a power strip, ensure the power strip is plugged into an electrical outlet and is turned on. Also, bypass power protection devices, power strips, and power extension cables to verify the computer turns on properly. • Ensure the electrical outlet is working by testing it with another device, such as a lamp.
	Blinking Amber	System fails to complete POST. Processor failure	• Remove and then reinstall any cards. • Remove and then reinstall the graphics card, if applicable. • Ensure the 4 Pin ATX Power Connector is connected to

			motherboard. • Reseat the 4 Pin ATX Power Connector for the Processor. **NOTE:** • Blinking Frequency: 0.5 Seconds ON, 0.5 Seconds OFF. • When the CPU is not seated properly or not detected, the system will automatically power off.
	Steady Amber	System is in standby or this is a system fault error condition, including the power supply. Only the +5 VSB rail on the power supply is working correctly.	• Press the power button to bring the system out of standby mode. • Ensure all power cables are securely connected to the system board. • Ensure the main power cable and front panel cable are securely connected to the system board. **NOTE:** If the system was abnormally turned off, you need to disconnect and plug in the AC power cord.

			Then turn on the system. Otherwise, you may see an incorrect power light state.
	Steady White	The system is fully functional and in the On state.	If the computer is not responding, do the following: • Ensure the display is connected and turned on. • If the display is connected and turned on, listen for a beep code.

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Beep Codes

The system can emit a series of beeps during start-up if the display cannot show errors or problems. These series of beeps, called beep codes, identify various problems.

1. 3 means 3-3-3-3...That is 3 beeps and 3 beeps and ...: Endless looping until user presses the power button to shut down the system.
2. The delay between each beep is 300 ms, The delay between each set of beeps is 3 sec, the beep sound lasts 300 ms.
3. After each beep and each set of beeps, the BIOS should detect if the user presses the power button, if so, BIOS will jump out from looping and execute the normal shutdown process and power system.

Power LED Status	**Beep**	**Description**	**Failure Coverage**
	1	BIOS ROM checksum in progress or failure. BIOS Chip	System board failure. Covers BIOS corruption or ROM error
	2	No RAM Detected	No memory detected
	3	• Chipset Error (North and South Bridge Chipset, DMA/IMR/Timer Error for Intel platform); Chipset Error • Time-Of-Day Clock test failure. • Gate A20 failure • Super I/O chip failure • Keyboard controller test failure.	System board Failure (**Power LED Blinking Amber**)

	4	RAM Read/Write failure	Memory failure
	5	RTC Power Fail	COMS battery failure
	6	Video BIOS Test Failure	Video card failure
	7	CPU Failure	CPU

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Error Messages

Error Message	Description
AUXILIARY DEVICE FAILURE	The touchpad or external mouse may be faulty. For an external mouse, check the cable connection. Enable the Pointing Device option in the system setup program.
BAD COMMAND OR FILE NAME	Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct pathname.
CACHE DISABLED DUE TO FAILURE	The primary cache internal to the microprocessor has failed. Contact Dell.
CD DRIVE CONTROLLER FAILURE	The CD drive does not respond to commands from the computer.
DATA ERROR	The hard drive cannot read the data.
DECREASING AVAILABLE MEMORY	One or more memory modules may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
DISK C: FAILED INITIALIZATION	The hard drive failed initialization. Run the hard drive tests in the Dell Diagnostics.
DRIVE NOT READY	The operation requires a hard drive in the bay before it can continue. Install a hard drive in the hard drive bay.
ERROR READING PCMCIA CARD	The computer cannot identify the ExpressCard. Reinsert the card or try another card.
EXTENDED MEMORY SIZE HAS CHANGED	The amount of memory recorded in nonvolatile memory (NVRAM) does not match the memory installed in the computer. Restart the computer. If the error appears again, contact Dell.
THE FILE BEING COPIED IS TOO LARGE FOR THE DESTINATION DRIVE	The file that you are trying to copy is too large to fit on the disk, or the disk is full. Try copying the file to a different disk or use a

	larger capacity disk.
A FILENAME CANNOT CONTAIN ANY OF THE FOLLOWING CHARACTERS: \ / : * ? " < > | -	Do not use these characters in filenames.
GATE A20 FAILURE	A memory module may be loose. Reinstall the memory modules and, if necessary, replace them.
GENERAL FAILURE	The operating system is unable to carry out the command. The message is usually followed by specific information-for example, Printer out of paper. Take the appropriate action.
HARD-DISK DRIVE CONFIGURATION ERROR	The computer cannot identify the drive type. Shut down the computer, remove the hard drive, and boot the computer from a CD. Then, shut down the computer, reinstall the hard drive, and restart the computer. Run the Hard Disk Drive tests in the Dell Diagnostics.
HARD-DISK DRIVE CONTROLLER FAILURE 0	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from a CD. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard Disk Drive tests in the Dell Diagnostics.
HARD-DISK DRIVE FAILURE	The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive, and boot the computer from a CD. Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard Disk Drive tests in the Dell Diagnostics.
HARD-DISK DRIVE READ FAILURE	The hard drive may be defective. Shut down the computer, remove the hard drive, and boot the computer from a CD.

	Then, shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard Disk Drive tests in the Dell Diagnostics.
INSERT BOOTABLE MEDIA	The operating system is trying to boot to non-bootable media, such as a floppy disk or CD. Insert bootable media.
INVALID CONFIGURATION INFORMATION-PLEASE RUN SYSTEM SETUP PROGRAM	The system configuration information does not match the hardware configuration. The message is most likely to occur after a memory module is installed. Correct the appropriate options in the system setup program.
KEYBOARD CLOCK LINE FAILURE	For external keyboards, check the cable connection. Run the Keyboard Controller test in the Dell Diagnostics.
KEYBOARD CONTROLLER FAILURE	For external keyboards, check the cable connection. Restart the computer, and avoid touching the keyboard or the mouse during the boot routine. Run the Keyboard Controller test in the Dell Diagnostics.
KEYBOARD DATA LINE FAILURE	For external keyboards, check the cable connection. Run the Keyboard Controller test in the Dell Diagnostics.
KEYBOARD STUCK KEY FAILURE	For external keyboards or keypads, check the cable connection. Restart the computer, and avoid touching the keyboard or keys during the boot routine. Run the Stuck Key test in the Dell Diagnostics.
LICENSED CONTENT IS NOT ACCESSIBLE IN MEDIADIRECT	Dell MediaDirect cannot verify the Digital Rights Management (DRM) restrictions on the file, so the file cannot be played.
MEMORY ADDRESS LINE FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.

MEMORY ALLOCATION ERROR	The software you are attempting to run is conflicting with the operating system, another program, or a utility. Shut down the computer, wait 30 seconds, and then restart it. Try to run the program again. If the error message still appears, see the software documentation.
MEMORY DOUBLE WORD LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
MEMORY ODD/EVEN LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
MEMORY WRITE/READ FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
NO BOOT DEVICE AVAILABLE	The computer cannot find the hard drive. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.
NO BOOT SECTOR ON HARD DRIVE	The operating system may be corrupted. Contact Dell.
NO TIMER TICK INTERRUPT	A chip on the system board may be malfunctioning. Run the System Set tests in the Dell Diagnostics.
NOT ENOUGH MEMORY OR RESOURCES. EXIT SOME PROGRAMS AND TRY AGAIN	You have too many programs open. Close all windows and open the program that you want to use.
OPERATING SYSTEM NOT FOUND	Reinstall the hard drive (see your Service Manual at support.dell.com). If the problem persists, contact Dell.
OPTIONAL ROM BAD CHECKSUM	The optional ROM has failed. Contact Dell.
A REQUIRED .DLL FILE WAS NOT FOUND	The program that you are trying to open is missing an essential file. Remove and then reinstall the program.

SECTOR NOT FOUND	The operating system cannot locate a sector on the hard drive. You may have a defective sector or corrupted FAT on the hard drive. Run the Windows error-checking utility to check the file structure on the hard drive. See Windows Help and Support for instructions (click **Start > Help and Support**). If a large number of sectors are defective, back up the data (if possible), and then reformat the hard drive.
SEEK ERROR	The operating system cannot find a specific track on the hard drive.
SHUTDOWN FAILURE	A chip on the system board may be malfunctioning. Run the System Set tests in the Dell Diagnostics
TIME-OF-DAY CLOCK LOST POWER	System configuration settings are corrupted. Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data by entering the system setup program, then immediately exit the program. If the message reappears, contact Dell.
TIME-OF-DAY CLOCK STOPPED	The reserve battery that supports the system configuration settings may require recharging. Connect your computer to an electrical outlet to charge the battery. If the problem persists, contact Dell.
TIME-OF-DAY NOT SET-PLEASE RUN THE SYSTEM SETUP PROGRAM	The time or date stored in the system setup program does not match the system clock. Correct the settings for the Date and Time options.
TIMER CHIP COUNTER 2 FAILED	A chip on the system board may be malfunctioning. Run the System Set tests in the Dell Diagnostics.
UNEXPECTED INTERRUPT IN PROTECTED MODE	The keyboard controller may be malfunctioning, or a memory module may be loose. Run the System Memory tests and the Keyboard

	Controller test in the Dell Diagnostics.
X:\ IS NOT ACCESSIBLE. THE DEVICE IS NOT READY	Insert a disk into the drive and try again.
WARNING: BATTERY IS CRITICALLY LOW	The battery is running out of charge. Replace the battery, or connect the computer to an electrical outlet; otherwise, activate hibernate mode or shut down the computer.

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System Messages

If your computer has an issue or error, it may display a System Message that will help you identify the cause and action needed to resolve the issue.

NOTE: If the message received is not listed in the following examples, see the documentation for either the operating system or the program that was running when the message appeared.

System Messages	
System Message	**Description**
Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support	The computer failed to complete the boot routine three consecutive times for the same error
CMOS checksum error	Possible motherboard failure or RTC battery low
CPU fan failure	CPU fan has failed
System fan failure	System fan has failed
Hard-disk drive failure	Possible hard disk drive failure during POST
Hard-disk drive read failure	Possible hard disk drive failure during HDD boot test
Keyboard failure	Keyboard failure or loose cable. If reseating the cable does not solve the problem, replace the keyboard
No boot device available	No bootable partition on hard disk drive, the hard disk drive cable is loose, or no bootable device exists. • If the hard drive is your boot device, ensure that the cables are connected and that the drive is installed properly and partitioned as a boot device • Enter system setup and ensure that the boot sequence information is correct
No timer tick interrupt	A chip on the system board might be

	malfunctioning or motherboard failure
USB over current error	Disconnect the USB device. The USB device needs more power for it to function properly. Use an external power source to connect the USB device, or if the device has two USB cables, connect both of them
CAUTION - Hard Drive SELF MONITORING SYSTEM has reported that a parameter has exceeded its normal operating range. Dell recommends that you back up your data regularly. A parameter out of range may or may not indicate a potential hard drive problem	S.M.A.R.T error, possible hard disk drive failure

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Contacting Dell

To contact Dell for sales, technical support, or customer service issues:

1. Visit support.dell.com.
2. Verify your country or region in the **Choose a Country/Region** drop-down menu at the bottom of the page.
3. Click **Contact Us** on the left side of the page.
4. Select the appropriate service or support link based on your need.
5. Choose the method of contacting Dell that is convenient for you.